SOIL SURVEY

Houston County Alabama

OUR SOIL ★ OUR STRENGTH

Issued February 1968

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES
and
ALABAMA AGRICULTURAL EXPERIMENT STATION

Major fieldwork for this soil survey was completed in 1964. Soil names and descriptions were approved in 1965. Unless otherwise indicated, statements in the publication refer to conditions in the county in 1964. This survey of Houston County was made as part of the technical assistance furnished by the Soil Conservation Service to the Houston County Soil and Water Conservation District.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms and woodlands; in selecting sites for roads, ponds, buildings, or other structures; and in appraising the value of tracts of land for agriculture, industry, or recreation.

Locating Soils

All the soils of Houston County are shown on the detailed map at the back of this report. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with numbers shown on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbol. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all of the soils of the county in alphabetic order by map symbol. It shows the page where each kind of soil is described, and also the page for the capability unit and woodland group in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Interpretations not included in the text can be developed by grouping soils according to suitability or degree of limitation for a particular use. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the discussions of the capability units.

Foresters and others can refer to the section "Woodland," where the soils of the county are grouped according to their suitability for trees.

Game managers, sportsmen, and others concerned with wildlife will find information about soils and wildlife in the section "Wildlife."

Engineers and builders will find under "Engineering" tables that give descriptions of the engineering properties of the soils in the county and that name soil features that affect engineering practices and structures.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation, Morphology, and Classification of the Soils."

Students, teachers, and others will find information about soils and their management in various parts of the text.

Newcomers in Houston County may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the section "General Nature of the County," which gives additional information about the county.

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NOTICE TO LIBRARIANS

Series year and series number are no longer shown on soil surveys. See explanation on the next page.

Issued February 1968

EXPLANATION

Series Year and Series Number

Series year and number were dropped from all soil surveys sent to the printer after December 31, 1965. Many surveys, however, were then at such advanced stage of printing that it was not feasible to remove series year and number. Consequently, the last issues bearing series year and number will be as follows:

Series 1957, No. 23, Las Vegas and Eldorado Valleys Area, Nev.
Series 1958, No. 34, Grand Traverse County, Mich.
Series 1959, No. 42, Judith Basin Area, Mont.
Series 1960, No. 31, Elbert County, Colo. (Eastern Part)
Series 1961, No. 42, Camden County, N.J.
Series 1962, No. 13, Chicot County, Ark.
Series 1963, No. 1, Tippah County, Miss.

Series numbers will be consecutive in each series year, up to and including the numbers shown in the foregoing list. The soil survey for Tippah County, Miss., will be the last to have a series year and series number.

SOIL SURVEY OF HOUSTON COUNTY, ALABAMA

REPORT BY DWIGHT M. HARRIS, JR., SOIL CONSERVATION SERVICE

SOILS SURVEYED BY DWIGHT M. HARRIS, JR., GLENN L. HICKMAN, JOHN H. HATAWAY, AND LEWIS A. DUNGAN, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES AND THE ALABAMA AGRICULTURAL EXPERIMENT STATION

HOUSTON COUNTY, in the southeastern corner of Alabama (fig. 1), has a land area of approximately 369,920 acres. Dothan is the county seat. The Chattahoochee River, flowing southward, forms its eastern boundary. The Little Choctawhatchee River, flowing westward, forms the boundary between the northwestern part of the county and Dale County.

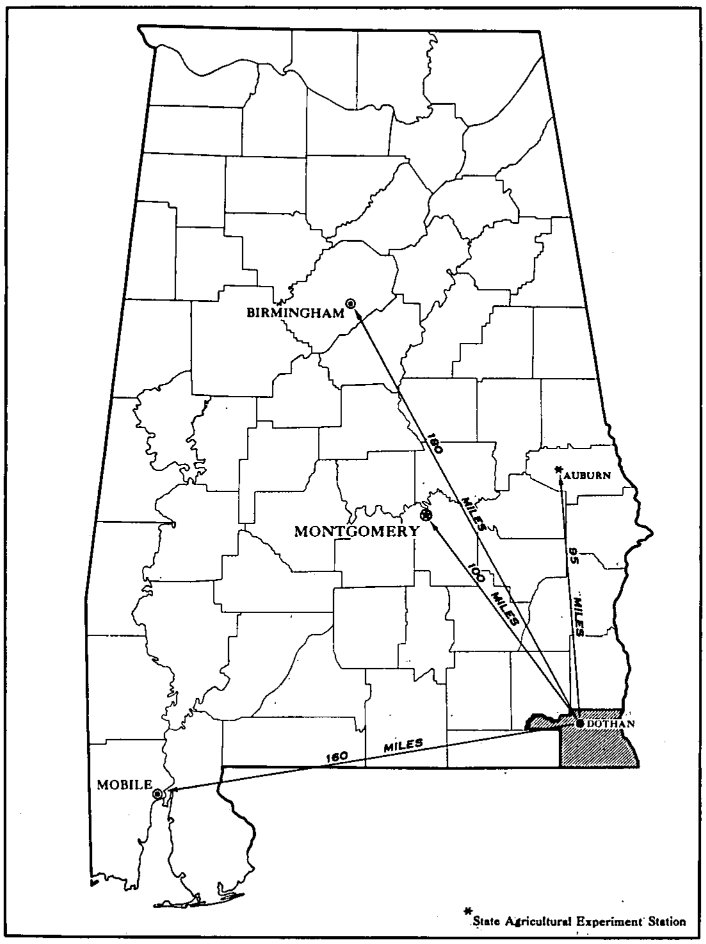

Figure 1.—**Location of Houston County in Alabama.**

The county is wholly on the Coastal Plain. The elevation ranges from about 120 feet above sea level, at a point in the southeastern corner of the county, to about 345 feet above sea level at a point near Webb in the north-central part of the county. The topography is mainly level to gently sloping, but scattered strongly sloping areas occur in the northern part of the county.

The county has a well-developed drainage system. Several creeks flow southward into Florida. Omusee Creek flows in a general northeasterly direction from the vicinity of Dothan. It crosses the northern boundary but bends and reenters the county before emptying into the Chattahoochee River. The panhandle is drained by several creeks that flow northward to the Little Choctawhatchee River.

The county is mainly agricultural. Cotton, corn, and peanuts are the principal crops, but small grain, melons, and vegetables are also important. Much of the cropland is subject to water and wind erosion. Rainfall is usually well distributed throughout the year, but in some years it is deficient during the growing season. An average of 53 inches is received annually. Beef cattle, hogs, and dairy cattle are the main livestock enterprises.

How This Soil Survey Was Made

Soil scientists made this survey to learn what kinds of soils are in Houston County, where they are located, and how they can be used. They went into the county knowing they likely would find many soils they had already seen and perhaps some they had not. As they traveled over the county, they observed steepness, length, and shape of slopes; size and speed of streams; kinds of native plants or crops; kinds of rock; and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by roots of plants.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nation-

wide, uniform procedures. To use this publication efficiently, it is necessary to know the kinds of groupings most used in a local soil classification.

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, the major horizons of all the soils of one series are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Dothan and Orangeburg, for example, are the names of two soil series. All soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the natural landscape. Soils of one series can differ somewhat in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man.

Many soil series contain soils that differ in the texture of their surface layer. According to such differences in texture, separations called soil types are made. Within a series, all soils having a surface layer of the same texture belong to one soil type.

Some types vary so much in slope, degree of erosion, number and size of stones, or some other feature affecting their use that practical suggestions about their management could not be made if they were shown on the soil map as one unit. Such soil types are divided into phases. The name of a soil phase indicates a feature that affects management. For example, Dothan loamy sand, 2 to 5 percent slopes, is one of several phases of Dothan loamy sand.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this report was prepared from aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning management of farms and fields, a mapping unit is nearly equivalent to a soil type or a phase of a soil type. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil type or soil phase.

In preparing some detailed maps, the soil scientists have a problem of delineating areas where different kinds of soils are so intricately mixed or occur in such small individual tracts that it is not practical to show them separately on the map. Such a mixture of soils is shown on the map as one mapping unit and called a soil complex. Ordinarily, a soil complex is named for the major kinds of soil in it, for example, Wicksburg-Esto complex, 2 to 5 percent slopes. Another kind of mapping unit is the undifferentiated group, which consists of two or more soils that may occur together without regularity in pattern or relative proportion. The individual tracts of the component soils could be shown separately on the map, but the differences between the soils are so slight that the separation is not important for the objectives of the soil survey. An example is Bibb and Bladen soils. Also, on most soil maps, areas are shown that are so rocky, so shallow, or so frequently worked by wind and water that they scarcely can be called soils. These areas are shown on a soil map like other mapping units, but they are given descriptive names, such as Gullied land, and are called land types rather than soils.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soils in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soils. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in such a way that it is readily useful to different groups of readers, among them farmers, managers of woodland, engineers, and homeowners. Grouping soils that are similar in suitability for each specified use is the method of organization commonly used in soil surveys. On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others, then adjust them according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

The general soil map at the back of this report shows, in color, the soil associations in Houston County. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county or who want to know the location of large tracts that are suitable for a certain kind of farming or other land use. Such a map is not suitable for planning the management of a farm or field, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect management.

In this county there are five associations. These are discussed in the following pages.

1. Dothan-Varina-Tifton association

Well-drained, gently rolling upland soils that have a surface layer of loamy sand or sandy loam and a subsoil of sandy loam to sandy clay; soft plinthite at a depth of 26 to 50 inches

This association (fig. 2) consists mainly of upland ridges that have long, gentle side slopes and tops that broaden in a few places into fairly large, nearly level

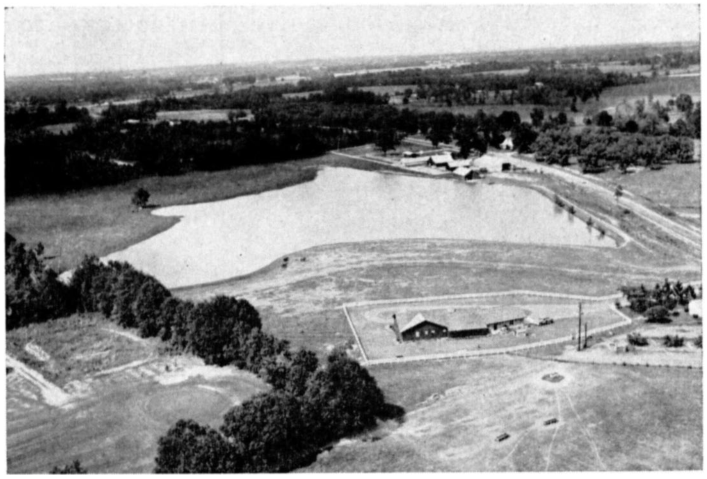

Figure 2.—General view in association 1. The fenced homesite in the foreground is on Dothan loamy sand, 0 to 2 percent slopes. The pond is bordered by a Tifton fine sandy loam. The cleared areas in the background are mainly Varina fine sandy loams.

areas. It has a well-developed drainage system of small draws leading to branches that spill into creeks. All the creeks flow generally southward, except Omusee Creek, which flows generally eastward. The Little Choctawhatchee River flows westward. Generally, the slope is less than 8 percent, except in small areas adjacent to streams. In the Omusee Creek watershed, the topography is broken and some of the slopes exceed 17 percent. This association makes up about 46 percent of the county.

Dothan, Varina, and Tifton soils make up about 60 percent of this association. These soils have a dark-gray to grayish-brown surface layer 4 to 10 inches thick. The Dothan soils are yellowish-brown sandy loam in the upper part of their subsoil and sandy loam to sandy clay loam in the lower part. The Varina and Tifton soils have a subsoil of yellowish-brown sandy clay loam to sandy clay. Orangeburg, Alaga, Esto, Red Bay, Faceville, Carnegie, Cowarts, and Wagram soils make up about 30 percent of the acreage. They occur throughout the association in small, widely scattered areas. Grady, Pansey, Grangeburg, Ardilla, Bibb, and Bladen soils and sandy alluvium make up the rest.

About 65 percent of this association is on nearly level or gently sloping ridges. These areas are extensively farmed. About 10 percent of the association is more strongly sloping, and although the soils are well suited to crops and pasture, they need intensive management to control erosion. Some of this acreage is too steep or too stony for cultivation but is well suited to trees. Another 10 percent of the association consists of somewhat poorly drained and poorly drained upland soils, which are used mainly for pasture and woodland. The remaining 15 percent is wet bottom land covered with dense stands of medium-sized or small water-tolerant trees—gum, oak, and cypress—and a few scattered pines. Some of the gum trees are harvested, and some hardwoods are cut for pulpwood. Very little of the bottom land has been cleared.

Most of the cultivable acreage in this association is farmed. Farms are mainly owner operated and are 100 to 200 acres in size. Farm products are highly diversified; corn, cotton, peanuts, truck crops, cattle, and hogs are important sources of income. Many families maintain homes in this association but derive their income from nonfarm sources.

2. *Alaga-Dothan-Bibb association*

Well-drained, nearly level to gently undulating upland soils that have a surface layer of sandy loam or loamy sand and a subsoil of loamy sand to sandy clay loam; and poorly drained bottom-land soils.

This association consists mainly of broad flats and gently undulating areas. It includes a few ridges that have side slopes of as much as 12 percent. The drainage system in nearly level areas is poorly developed. There are many small swamps and intermittent ponds. Surface water drains slowly into creeks that meander through large, poorly drained, wooded bottom lands. All of the creeks flow southward. Some of the upland soils are poorly drained and are on flats at slightly lower elevations than the well-drained soils. This association makes up about 35 percent of the county; all of it is in the southern half.

Alaga, Dothan, and Wagram soils make up about 45 percent of this association. These soils have a surface layer of gray to very dark grayish-brown loamy sand to fine sandy loam and a subsoil of yellowish-brown loamy sand to sandy clay loam. Bibb and Bladen soils, mapped as an undifferentiated unit, occupy about 20 percent of the association. These soils have a surface layer of gray to black sandy loam to silt loam and a subsoil of mottled, gray sandy loam to silty clay. These soils occur as broad bottom lands bordering streams, and they are flooded frequently. The remaining 35 percent of the association is made up of small, widely scattered areas of Swamp (fig. 3) and of soils of the Pansey, Orangeburg, Red Bay, Tifton, Troup, Esto, Plummer, Ocilla, Ardilla, and Grangeburg series.

The well-drained upland soils are well suited to agriculture and are extensively farmed. Most of the acre-

Figure 3.—Area of Swamp in association 2. This wet area is bordered by higher lying Pansey fine sandy loam. Adjoining better drained upland areas are occupied by soils of the Alaga, Dothan, and Wagram series.

age of poorly drained upland soils is in pasture or in stands of pine or of gum and cypress. The broad, poorly drained bottom lands are not cleared. The vegetation on the bottom lands consists of dense stands of small and medium-sized gum, cypress, and other water-tolerant trees. In the eastern fourth of this association are extensive woodlands that produce pulpwood, sawtimber, and naval stores. The residents of the western three-fourths of this association derive most of their income from the land.

3. *Orange-Red Bay-Greenville association*

Deep, well-drained, nearly level to sloping upland soils that have a surface layer of grayish-brown to dark reddish-brown sandy loam and a subsoil of yellowish-red to dark-red sandy loam to sandy clay

This association consists of flats and broad ridgetops with side slopes of as much as 12 percent. It makes up about 6 percent of the county and occupies the northwestern and southwestern corners.

The larger part of this association, which is in the northwestern part of the county, consists of high ridges that broaden in a few places to fairly large, nearly level areas. It has a well-developed drainage system of small draws and branches leading to larger creeks that flow northward to the Little Choctawhatchee River. In most places the ridges have long, gentle side slopes, but there are a few sharp breaks where the slopes are more than 17 percent. There are several large, caving-type gullies on the long, gentle slopes. Gullies of this kind are hard to control, and they can become hazards in places where runoff water concentrates.

The smaller part of this association, which is in the southwestern corner of the county, consists of broad, low-lying, nearly level or very gently sloping areas and short, stronger slopes adjacent to streams and natural ponds. This part of the association has a moderately well developed drainage pattern of many shallow ponds and swamps that drain slowly into small streams leading into creeks that flow southward into Florida.

Red Bay, Orangeburg, and Greenville soils make up about 75 percent of this association. These soils have a surface layer of grayish-brown to dark reddish-brown sandy loam and a subsoil of yellowish-red to dark-red sandy loam to sandy clay. Dothan, Troup, Faceville, Americus, Tifton, and Varina soils make up about 15 percent of this association. Poorly drained bottom-land soils along creeks and their tributaries make up the rest.

The part of this association lying in the southwestern corner of the county is suited to farming, and most of the people living in the area make their living from the land. The principal sources of farm income are corn, cotton, peanuts, hogs, and beef cattle. Pecans and truck crops are less important sources. In some of the areas, the soils are strongly sloping and too erodible to be used for cultivated crops. Soils on the stronger slopes are sandy and droughty, and intensive management is necessary to control erosion, especially gully erosion. These areas are well suited to trees. The wet bottom lands and the swampy areas support a dense growth of vines, bushes, and water-tolerant hardwoods.

The part of this association lying in the northwestern corner of the county is heavily populated. Many families live in rural areas but derive their income from nonfarm sources.

4. *Alaga-Lucy-Troup association*

Deep, well-drained and somewhat excessively drained, chiefly nearly level and very gently sloping sandy soils of the uplands

This association consists chiefly of flats and broad ridgetops and includes side slopes that range to more than 17 percent in places. It makes up about 8 percent of the county and occurs in the southeastern and northwestern corners.

The larger part of the association, which is in the southeastern part of the county, consists of broad, low-lying, nearly level or very gently sloping areas, with short, stronger slopes adjacent to streams and depressions. This part of the association has a poorly developed drainage system consisting of many small intermittent ponds, larger permanent ponds with a widely fluctuating water level, a few broad swampy areas that lack drainage outlets, and a few small intermittent streams that flow gently eastward to the Chattahoochee River.

The smaller part of this association, which is in the northwestern part of the county, consists of high ridges that broaden in a few places to fairly large, nearly level areas. This part of the association has a well-developed drainage system consisting of several creeks fed by smaller streams and draws. Many areas adjacent to streams have slopes in excess of 17 percent.

Alaga, Troup, Lucy, and Wagram soils make up about 85 percent of this association. These soils have a surface layer of brown to dark grayish-brown loamy sand and a subsoil of yellowish-brown to yellowish-red loamy sand. The Wagram and Lucy soils are underlain by yellowish-brown to red sandy loam to sandy clay loam at a depth of more than 20 inches. The remaining 15 percent of this association is made up of soils of the Dothan, Orangeburg, Esto, Pelham, and Ocilla series, the undifferentiated unit mapped as Bibb soils and sandy alluvium, and Swamp.

Most of the nearly level acreage in the northwestern part of this association is used for corn, cotton, peanuts, and pasture. The more sloping areas are in scrub oak, undesirable hardwoods, and scattered pines. This part of the association is densely populated. Most of the families live along the highways, and many of them make their living from nonfarm sources.

The southeastern part of this association is mostly in woodland consisting of fairly good stands of pine and scattered scrub oaks. A few areas are used for corn, peanuts, and pasture. Areas of Bibb soils and sandy alluvium and of Swamp support a dense growth of small hardwoods and water-tolerant brush. This part of the association is sparsely populated. Most of the land is owned by a few individuals, and the tracts are generally large.

5. *Alaga-Flint-Maxton association*

Deep, well drained and moderately well drained, chiefly gently undulating soils of stream terraces

This association consists chiefly of level to gently undulating soils on stream terraces along the Chattahoochee, Choctawhatchee, and Little Choctawhatchee Rivers.

The Chattahoochee River forms the eastern border of the county, and the Choctawhatchee Rivers round out the western corner. The association occurs as a narrow band along each river. Many small, rounded depressions and long, poorly developed drainageways parallel the rivers. They are ponded most of the winter. A few deep creeks cross each part of the association and flow into the rivers. There are a few deep sinkholes along the Chattahoochee River. Low terraces along the banks of this river are subject to occasional overflow (fig. 4) in winter. High terraces, nearer the uplands, are seldom flooded. This association makes up about 5 percent of the county.

Alaga, Flint, and Maxton soils make up about 55 percent of this association. These soils have a surface layer of grayish-brown to dark-gray loamy sand to sandy loam. The Alaga soils have a subsoil of yellowish-brown loamy sand. The Flint soils have a subsoil of yellowish-red clay loam to clay, mottled with gray at a depth of 17 to 27 inches. They are moderately well drained. The Maxton soils have a subsoil of yellowish-red to red sandy loam to sandy clay loam.

Wickham, Bladen, and Dunbar soils make up about 15 percent of the association. The Wickham soils are well drained, the Bladen soils are poorly drained, and the Dunbar soils are somewhat poorly drained. Soils on first bottoms, such as those of the Ochlockonee and Mantachie series, make up another 15 percent of this association. Soils of the Grady series and other poorly drained soils make up the rest.

Except for areas of Maxton and Wickham soils, which are used for cultivated crops, this association is used mainly for pasture and woodland. Most of the association is in farms 300 acres or more in size. The farms are operated by tenants or hired overseers. There are few homes. Some areas are good sources of sand and gravel. This association is suitable for recreation sites and for wildlife habitats.

Figure 4.—General view in association 5 at a time when the Chattahoochee River has overflowed onto low terraces along its banks. The flooded soils in the foreground are Dunbar fine sandy loam, overflow, 0 to 2 percent slopes, and Flint fine sandy loam, 0 to 2 percent slopes. The narrow strip in the background that looks like an island is an area of slightly higher lying Maxton and Wickham soils. Maxton and Alaga soils occupy the flooded area in the far background.

Descriptions of the Soils

This section describes the soil series and mapping units of Houston County. The approximate acreage and the proportionate extent of each mapping unit are given in table 1.

In the pages that follow, a general description of each soil series is given. The series description is followed by a detailed description of a profile representative of the series and a brief statement of the range in characteristics of the soils in the series, as mapped in this county. Each mapping unit is then described individually. The colors described are for the soils when moist.

Following the name of each mapping unit is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of the description of each mapping unit are the capability unit and the woodland group in which the mapping unit has been placed. The page on which each capability unit and woodland group is described can be found readily by referring to the "Guide to Mapping Units," which is at the back of this publication.

For more general information about the soils, the reader can refer to the section "General Soil Map," in which the broad patterns of soils are described. Many terms used in the soil descriptions and other sections are defined in the Glossary.

Alaga Series

Soils in the Alaga series are coarse textured and well drained. They developed in beds of marine-deposited sand and loamy sand. They occur on stream terraces where the slope is 0 to 5 percent and on uplands where the slope is 0 to 17 percent. The native vegetation is longleaf pine with some scrub oak and dogwood and a ground cover of wiregrass.

In this county Alaga soils are associated with Dothan, Ocilla, Wagram, and Troup soils. They have a sandier subsoil than Dothan and Wagram soils. They are better drained and less mottled in their subsoil than Ocilla soils and are less reddish in their subsoil than Troup soils.

Representative profile of Alaga loamy sand, 0 to 5 percent slopes, under cover of bahiagrass, NE¼SW¼SW¼SW¼SW¼ sec. 16, T. 3 N., R. 24 E.:

Ap—0 to 6 inches, grayish-brown (2.5Y 5/2) loamy sand; single grain; loose or very friable; many fine roots; medium acid; clear, smooth boundary.

C1—6 to 12 inches, brown (10YR 5/3) loamy sand; single grain; loose or very friable; many fine roots; medium acid; clear, smooth boundary.

C2—12 to 22 inches, yellowish-brown (10YR 5/4) loamy sand; single grain; very friable; common fine roots; medium acid; diffuse, smooth boundary.

C3—22 to 50 inches, brownish-yellow (10YR 6/6) loamy sand; single grain; very friable or loose; common fine roots; very strongly acid; diffuse, smooth boundary.

C4—50 to 60 inches +, brownish-yellow (10YR 6/6) loamy sand with few, medium, faint, yellowish-brown (10YR 5/8) mottles and few, medium, distinct, pale-brown (10YR 6/3) mottles; single grain; very friable; very strongly acid.

The A horizon ranges from pale brown (10YR 6/3) to dark grayish brown (2.5Y 4/2) in color and from 5 to 15 inches in thickness. The C horizon ranges from yellow (10YR 7/6) through brown (10YR 5/3) to strong

TABLE 1.—*Approximate acreage and proportionate extent of the soils*

Soil	Acres	Percent
Alaga loamy sand, 0 to 5 percent slopes	36, 086	9. 7
Alaga loamy sand, 5 to 8 percent slopes	4, 641	1. 3
Alaga loamy sand, 8 to 12 percent slopes	1, 739	. 4
Alaga and Esto soils, 12 to 17 percent slopes, eroded	1, 189	. 3
Americus loamy sand, 2 to 5 percent slopes	275	. 1
Americus loamy sand, 5 to 12 percent slopes	361	. 1
Ardilla fine sandy loam, 0 to 2 percent slopes	3, 516	1. 0
Bibb and Bladen soils	12, 986	3. 5
Bibb soils and sandy alluvium	16, 431	4. 4
Bladen silt loam	1, 076	. 3
Buncombe loamy sand	835	. 2
Carnegie fine sandy loam, 2 to 5 percent slopes, eroded	7, 035	1. 9
Carnegie fine sandy loam, 5 to 8 percent slopes, eroded	2, 842	. 8
Carnegie-Sunsweet complex, 2 to 5 percent slopes, eroded	1, 826	. 5
Carnegie-Sunsweet complex, 5 to 8 percent slopes, eroded	2, 982	. 8
Carnegie-Sunsweet complex, 5 to 8 percent slopes, severely eroded	464	. 1
Carnegie-Sunsweet complex, 8 to 12 percent slopes, eroded	2, 091	. 6
Carnegie-Sunsweet-stony land complex, 5 to 12 percent slopes	1, 370	. 4
Cowarts fine sandy loam, 2 to 5 percent slopes, eroded	1, 701	. 5
Cowarts fine sandy loam, 5 to 8 percent slopes, eroded	2, 514	. 7
Cowarts fine sandy loam, 5 to 8 percent slopes, severely eroded	220	. 1
Cowarts fine sandy loam, 8 to 12 percent slopes, eroded	1, 006	. 3
Dothan loamy sand, 0 to 2 percent slopes	16, 771	4. 5
Dothan loamy sand, 2 to 5 percent slopes	23, 933	6. 5
Dothan loamy sand, 2 to 5 percent slopes, eroded	35, 588	9. 6
Dothan loamy sand, 5 to 8 percent slopes, eroded	6, 339	1. 7
Dunbar fine sandy loam, 0 to 2 percent slopes	1, 237	. 3
Dunbar fine sandy loam, 2 to 5 percent slopes	497	. 1
Dunbar fine sandy loam, overflow, 0 to 2 percent slopes	909	. 2
Esto loamy sand, 2 to 5 percent slopes	929	. 3
Esto loamy sand, 2 to 5 percent slopes, eroded	3, 334	. 9
Esto loamy sand, 5 to 8 percent slopes, eroded	2, 491	. 7
Esto soils, 8 to 12 percent slopes, severely eroded	1, 344	. 4
Faceville fine sandy loam, 0 to 2 percent slopes	1, 012	. 3
Faceville fine sandy loam, 2 to 5 percent slopes, eroded	3, 127	. 8
Flint fine sandy loam, 0 to 2 percent slopes	947	. 3
Flint fine sandy loam, 2 to 5 percent slopes	856	. 2
Grady soils	5, 363	1. 5
Grangeburg fine sandy loam, 0 to 2 percent slopes	7, 374	2. 0
Grangeburg fine sandy loam, 2 to 5 percent slopes	1, 325	. 4
Greenville fine sandy loam, 0 to 2 percent slopes	1, 142	0. 3
Greenville fine sandy loam, 2 to 5 percent slopes, eroded	3, 441	. 9
Greenville fine sandy loam, 5 to 8 percent slopes, eroded	537	. 1
Gullied land	377	. 1
Iuka soils, local alluvium	2, 408	. 7
Lucy loamy sand, 0 to 2 percent slopes	1, 124	. 3
Lucy loamy sand, 2 to 5 percent slopes	2, 000	. 5
Lucy loamy sand, 5 to 8 percent slopes	2, 143	. 6
Lucy loamy sand, 8 to 17 percent slopes	2, 628	. 7
Mantachie soils	935	. 3
Mantachie soils, local alluvium	4, 880	1. 3
Maxton fine sandy loam, 0 to 2 percent slopes	526	. 1
Maxton fine sandy loam, 2 to 5 percent slopes	978	. 3
Ochlockonee soils	764	. 2
Ocilla loamy fine sand, 0 to 2 percent slopes	2, 768	. 7
Ocilla loamy fine sand, 2 to 5 percent slopes	760	. 2
Orangeburg sandy loam, 0 to 2 percent slopes	5, 287	1. 4
Orangeburg sandy loam, 2 to 5 percent slopes, eroded	16, 356	4. 4
Orangeburg sandy loam, 5 to 8 percent slopes, eroded	2, 207	. 6
Pansey fine sandy loam	12, 189	3. 3
Pelham sand	520	. 1
Plummer loamy sand	3, 167	. 9
Red Bay sandy loam, 0 to 2 percent slopes	2, 408	. 7
Red Bay sandy loam, 2 to 5 percent slopes, eroded	8, 272	2. 2
Red Bay sandy loam, 5 to 8 percent slopes, eroded	2, 553	. 7
Red Bay sandy loam, 8 to 12 percent slopes, eroded	1, 084	. 3
Rough broken and stony land	1, 814	. 5
Swamp	7, 152	1. 9
Tifton fine sandy loam, 0 to 2 percent slopes	4, 795	1. 3
Tifton fine sandy loam, 2 to 5 percent slopes, eroded	20, 058	5. 4
Tifton fine sandy loam, 5 to 8 percent slopes, eroded	1, 844	. 5
Troup loamy sand, 0 to 5 percent slopes	6, 546	1. 8
Varina fine sandy loam, 0 to 2 percent slopes	1, 862	. 5
Varina fine sandy loam, 2 to 5 percent slopes, eroded	11, 127	3. 0
Wagram loamy sand, 0 to 2 percent slopes	3, 673	1. 0
Wagram loamy sand, 2 to 5 percent slopes	6, 878	1. 9
Wagram loamy sand, 5 to 8 percent slopes	373	. 1
Wickham fine sandy loam, 0 to 2 percent slopes	550	. 1
Wickham fine sandy loam, 2 to 5 percent slopes	801	. 2
Wicksburg-Esto complex, 2 to 5 percent slopes	1, 429	. 4
Wicksburg-Esto complex, 5 to 8 percent slopes, eroded	1, 532	. 4
Wicksburg-Esto complex, 8 to 12 percent slopes, eroded	1, 033	. 3
Mines and pits	437	. 1
Total	369, 920	100. 0

brown (7.5YR 5/6). Loamy sand extends to a depth of several feet in most places.

Alaga loamy sand, 0 to 5 percent slopes (AaB).—The surface layer of this soil is grayish-brown to pale-brown loamy sand 7 to 11 inches thick. It is underlain by yellow to yellowish-brown, very friable loamy sand that is 19 to more than 50 inches thick. Interbedded layers of sand and clay begin at a depth of more than 60 inches. Included in the areas mapped are small areas of Dothan, Esto, Troup, and Iuka soils.

This soil is very low in fertility and low in water-holding capacity. Its root zone is deep, and there is no hindrance to root penetration. Water enters and moves through this soil rapidly. Surface runoff is very slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Most of the acreage is used for pasture, trees, and crops. Droughtiness and susceptibility to leaching are the main limitations. (Capability unit IIIs-11; woodland group C-1)

Alaga loamy sand, 5 to 8 percent slopes (AaC).—The surface layer of this soil is dark grayish-brown to pale-brown loamy sand 5 to 10 inches thick. It is underlain by yellow to yellowish-brown, very friable loamy sand 29 to more than 50 inches thick. Interbedded layers of sand and clay begin at a depth of more than 60 inches. Included in the areas mapped are small areas of Dothan, Esto, Wagram, and Troup soils and a small acreage where the surface layer is loamy fine sand.

This soil is very low in fertility and low in water-holding capacity. Its root zone is deep, and there is no hindrance to root penetration. Surface runoff is medium, and the erosion hazard is moderate. Water enters and moves through this soil rapidly. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Most of the acreage is used for pasture and trees. Shallow gullies form in cultivated areas. Droughtiness, the erosion hazard, and susceptibility to leaching are the major limitations. (Capability unit IVs–11; woodland group C–1)

Alaga loamy sand, 8 to 12 percent slopes (AaD).—The surface layer of this soil is dark grayish-brown to pale-brown loamy sand 5 to 10 inches thick. It is underlain by yellow to yellowish-brown, very friable loamy sand 29 to more than 50 inches thick. Interbedded layers of sand and clay begin at a depth of more than 60 inches. Included in the areas mapped are small areas of Wagram, Esto, and Troup soils.

This soil is very low in fertility and low in water-holding capacity. Its root zone is deep, and there is no hindrance to root penetration. Water enters and moves through this soil rapidly. Surface runoff is medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Most of the acreage is wooded, but a small part is in pasture. Shallow gullies are common in cultivated areas, and there are a few deep gullies. The erosion hazard, droughtiness, and susceptibility to leaching of fertilizer are the major limitations. (Capability unit VIs–11; woodland group C–1)

Alaga and Esto soils, 12 to 17 percent slopes, eroded (AeE2).—The soils in this undifferentiated unit are well drained or moderately well drained. The Alaga soils have a surface layer of grayish-brown or dark grayish-brown loamy sand overlying yellowish-brown to strong-brown loamy sand. The Esto soils have a surface layer of grayish-brown to very dark grayish-brown loamy sand overlying a clayey subsoil. Mottled, compacted material begins at a depth of 10 to 30 inches. Rills and shallow gullies are common in areas of Alaga soils, and there are a few deep gullies. In places the Esto soils are severely eroded, and the subsoil is exposed. Included in the areas mapped are small areas of Wicksburg, Sunsweet, and Carnegie soils.

These soils are low in fertility and in available moisture capacity and are strongly acid. Surface runoff is rapid, and the erosion hazard is severe. Water enters and moves through the Alaga soils rapidly, but it moves through the Esto soils slowly. Plant roots cannot penetrate the compacted material that underlies some of the areas of Esto soils.

Most of the acreage is in woodland consisting of longleaf pine, loblolly pine, scrub oak, scattered dogwood and hickory, and a ground cover of wiregrass. Droughtiness and the erosion hazard are the main limitations. (Capability unit VIIe–11; woodland group C–5)

Americus Series

Soils in the Americus series are coarse textured and well drained. They developed in thick beds of marine-deposited sand and loamy sand. They occur on uplands where the slope is 2 to 12 percent.

In this county Americus soils are associated with Red Bay, Greenville, and Troup soils. They are similar to Troup soils in texture but are more reddish throughout the profile than those soils. They are similar in color and horizonation to Red Bay and Greenville soils but are much sandier throughout than those soils.

Representative profile of Americus loamy sand, 2 to 5 percent slopes, in the northeastern part of the county:

Ap—0 to 7 inches, dusky-red (2.5YR 3/2) loamy sand; structureless; loose; medium acid; clear, smooth boundary.

B21t—7 to 24 inches, dusky-red (10R 3/4) coarse sandy loam; structureless; loose; sand grains coated and bridged with clay; medium acid; gradual, smooth boundary.

B22t—24 to 50 inches +, dark-red (2.5YR 3/6) coarse sandy loam; structureless; loose or very friable; sand grains coated and bridged with clay; strongly acid.

The A horizon ranges from dark brown (7.5YR 3/2) through dusky red (2.5YR 3/2) to dark reddish brown (2.5YR 2/4) in color and from 7 to 14 inches in thickness. The B horizon is coarse sandy loam or fine sandy loam. It ranges from dusky red (10R 3/4) to dark red (2.5YR 3/6) in color. The sandy loam extends to a depth of several feet in most places.

Americus loamy sand, 2 to 5 percent slopes (AmB).—The surface layer of this soil is dusky-red to dark reddish-brown loamy sand 7 to 14 inches thick. The subsoil is dusky-red to dark-red coarse sandy loam. Included in the areas mapped is a small acreage of loamy fine sand. Also included are small areas of a finer textured Red Bay soil.

This soil is very low in fertility and low in available water capacity. There is no hindrance to root penetration. Water enters and moves through this soil very rapidly. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Most of the acreage is used for pasture and crops. Droughtiness and susceptibility to leaching are the main limitations. (Capability unit IIIs–11; woodland group C–1)

Americus loamy sand, 5 to 12 percent slopes (AmD).—The surface layer of this soil is dusky-red to dark reddish-brown, loose loamy sand. The subsoil is dark-red coarse sandy loam. In some places this soil is underlain by red sandy clay loam at a depth of more than 40 inches. Shallow gullies are common in cultivated areas. Included in the areas mapped are small areas where the surface layer is red. Also included are small areas of Red Bay and Troup soils.

This soil is low in fertility and in available water capacity. It has an unrestricted root zone. Water en-

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ters and moves through this soil very rapidly. Gully erosion is a serious problem in some areas.

Most of the acreage is used for pasture and woodland. Except where pines have been planted, the woodland consists of scattered pine and scrub oak. A small acreage is used for row crops. The erosion hazard, droughtiness, and susceptibility to leaching are the main limitations. (Capability unit IVs-11; woodland group C-1)

Ardilla Series

Soils in the Ardilla series are deep and somewhat poorly drained. They developed in marine deposits and occur on uplands, as broad flats and as narrow bands around depressions and along streams. They are scattered throughout the county but are most common in the southeastern part. The slope range is 0 to 2 percent.

In this county Ardilla soils are associated with Grangeburg, Pansey, Dunbar, and Plummer soils. They are less well drained and more mottled than Grangeburg soils. They are better drained than Pansey soils but are more mottled in the subsoil. They are coarser textured in the subsoil than Dunbar soils. They are better drained and less sandy than Plummer soils.

Representative profile of Ardilla fine sandy loam, 0 to 2 percent slopes, under a cover of broomsedge, SE¼NE¼SE¼SW¼ sec. 24, T. 1 N., R. 26 E., near Madrid:

Ap—0 to 4 inches, very dark gray (10YR 3/1) fine sandy loam; weak, fine granular structure; very friable; many fine and medium roots; strongly acid; clear, smooth boundary.

A2—4 to 9 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many small and few medium roots; many small and medium root channels and wormholes; strongly acid; clear, smooth boundary.

B1t—9 to 15 inches, light yellowish-brown (2.5Y 6/4) sandy loam; weak, medium, subangular blocky structure; very friable; many small and medium pores; sand grains coated and bridged; strongly acid; gradual, smooth boundary.

B21tg—15 to 30 inches, yellowish-brown (10YR 5/6) light sandy clay loam with many, medium, distinct, light-gray (10YR 6/1) mottles and common, medium, faint, strong-brown (7.5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; sand grains coated and bridged; few patchy clay films on surfaces of peds; few small pores and root channels; few fine and medium roots; strongly acid; gradual, smooth boundary.

B22tg—30 to 38 inches, mottled yellowish-brown (10YR 5/6), light-gray (10YR 6/1), and strong-brown (7.5YR 5/6) sandy clay loam; weak or moderate, medium, subangular blocky structure; firm when moist, slightly hard when dry; few clay films on vertical and horizontal surfaces of peds; few small and medium pores; few medium roots; strongly acid; gradual, smooth boundary.

B23tg—38 to 60 inches, reticulately mottled red (2.5YR 4/6), strong-brown (7.5YR 5/6), light yellowish-brown (2.5Y 6/4), and light-gray (10YR 6/1) sandy clay loam (soft plinthite); weak, medium, subangular blocky structure; very firm; many patchy clay films on vertical and horizontal surfaces of peds; strongly acid.

The A horizon ranges from very dark gray to very dark grayish brown in color and from 6 to 12 inches in thickness. The B1t horizon ranges from light yellowish brown (2.5Y 6/4) to brownish yellow (10YR 6/6) in color and from 5 to 10 inches in thickness. The B2tg horizons are generally mottled and are light gray, yellowish brown, and strong brown in color. They range from 8 to 52 inches in thickness. Reticulately mottled sandy clay loam (soft plinthite) occurs at a depth ranging from 30 to 60 inches.

Ardilla fine sandy loam, 0 to 2 percent slopes (ArA).—The surface layer of this soil is very dark gray to very dark grayish-brown, friable fine sandy loam 6 to 12 inches thick. The upper part of the subsoil is light yellowish-brown, friable sandy loam, and the lower part is mottled gray, yellow, and yellowish-brown sandy clay loam. The depth to gray mottles is 8 to 18 inches. Compacted, multicolored sandy loam to sandy clay begins at a depth ranging from 28 to 50 inches. Included in the areas mapped is a small acreage where the surface layer is loamy sand 7 to 20 inches thick. Also included are areas where the lower part of the subsoil is sandy clay. In addition, a small acreage of Grangeburg and Pansey soils are included in the areas mapped.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through this soil at a moderate or slow rate. Surface runoff is very slow, and the erosion hazard is slight. Tilth is good, but the soil must be worked within a narrow range of moisture content to insure support for machinery and to prevent clodding.

This soil is used for corn, vegetables, pasture, and woodland. Free water is at a depth of only 15 to 20 inches most of winter and spring. Wetness is the major limitation. (Capability unit IIw-17; woodland group C-4)

Bibb Series

Soils in the Bibb series are medium textured to coarse textured and are poorly drained. They developed in alluvium washed from uplands. They occur on broad first bottoms and low stream terraces along the larger creeks. The water table is at or within a few inches of the surface throughout the year. These soils are ponded during much of the winter and are frequently flooded in summer. The native vegetation consists of dense stands of small and medium-sized, water-tolerant trees and woody plants. The trees are mainly blackgum, sweetgum, oak, poplar, bay, hackberry, cypress, and pine. Bamboo briers, gallberry, and water-tolerant bushes and shrubs form a dense undergrowth.

In this county Bibb soils are mapped only in undifferentiated units with Bladen soils and with sandy alluvium. They occur at slightly lower elevations than Bladen soils and receive more water from overflowing streams than those soils. They are finer textured than sandy alluvium and generally are not so highly stratified. Bibb soils are similar to Ochlockonee and Mantachie soils but are more poorly drained than those soils.

Representative profile of Bibb silt loam, 0 to 2 percent slopes, in a wooded area 1,500 feet north of Sealy Springs and 50 feet west of an unpaved road near Cottonwood:

A—0 to 6 inches, dark-gray (5Y 4/1) silt loam; massive; friable; many fine grass roots and common medium grass roots; few partly decomposed sticks; strongly acid; clear, smooth boundary.

C1g—6 to 26 inches, dark-gray (5Y 4/1) sandy loam; many, medium, distinct, light-gray (5Y 7/1) mottles; structureless; friable when moist; common medium tree

roots; few partly decomposed sticks and limbs; strongly acid; diffuse, smooth boundary.

C2g—26 to 38 inches, dark-gray (5Y 4/1) very fine sandy loam; many, medium, distinct, light-gray (5Y 7/1) mottles; structureless; friable; many thin streaks of loamy sand; few coarse roots; strongly acid; diffuse, smooth boundary.

C3g—38 to 50 inches, light-gray (N 7/0) sandy clay loam; few, fine, distinct, olive-yellow (2.5Y 6/6) mottles; structureless; firm when moist; pockets of sandy loam and loamy sand; few coarse roots; strongly acid.

The A horizon ranges from dark gray to black in color and from 4 to 10 inches in thickness. Its texture may be sandy loam, silt loam, or loamy sand. The C horizons are gleyed. They vary in texture and degree of stratification. In places they have a few mottles of yellowish brown in the lower part. The average texture of the C horizon is sandy loam, but thin layers of loamy sand or sandy clay loam occur in places.

Bibb and Bladen soils (0 to 2 percent slopes) (Bb).—The soils in this undifferentiated unit are deep, poorly drained, and strongly acid. About 50 percent of the unit is made up of Bibb soils, 25 percent of Bladen soils, and 25 percent of Sandy alluvium and Swamp. The pattern of soils is not consistent; the Bladen soils are widely scattered and occupy slightly higher positions than Bibb soils.

This unit is distributed throughout the county. It occurs as broad bottoms, 1/3 to ¾ mile wide, along gently flowing, meandering streams. The stream channels are usually shallow and are frequently shifted by the meandering of the streams. The surface is rough; there are sloughs and remnants of old stream channels, areas scoured by flooding, and areas where deposition of soil material has been uneven. Much of the acreage stands under shallow water in winter and is frequently flooded in summer. All of the acreage is in woodland consisting of water-tolerant trees and a dense undergrowth of briers and brush.

The surface layer of the Bibb soils is dark-gray to black loamy sand to silt loam. The subsoil consists of gray, highly stratified very fine sandy loam. The surface layer of the Bladen soils is dark-gray to black silt loam. The subsoil is gray clay loam to clay mottled with olive brown and strong brown.

These soils are moderately high in fertility and in available moisture capacity. Their organic-matter content is moderately high. Surface runoff is slow, and the erosion hazard is slight, except in spots likely to be scoured by floodwaters.

A few small areas have been cleared and planted to pasture, but severe competition from native woody plants has caused the pastureland to revert to woodland. Pulpwood, sawtimber, veneer, and fenceposts are produced. Straightening of stream channels, land smoothing, surface drainage, and control of native vegetation would be needed to make these soils suitable for pasture and row crops. (Capability unit IVw–11; woodland group C–2)

Bibb soils and sandy alluvium (0 to 2 percent slopes) (Bs).—The soils in this undifferentiated unit are deep, poorly drained, coarse textured, and acid. About 45 percent of the unit consists of Bibb soils, 45 percent of Sandy alluvium, and 10 percent of finer textured soils. The pattern of soils is not consistent.

This unit occurs throughout the county, mainly on flood plains less than a quarter of a mile wide, along the more rapid streams. The stream channels are usually shallow; they are frequently shifted by large quantities of sediments that wash into them from adjacent cultivated areas. The surface features resemble those of Bibb and Bladen soils. There are shallow sloughs and remnants of old stream channels, flood-scoured areas, and areas of uneven deposition of soil material. All of the acreage is in woodland consisting of water-tolerant trees and a dense undergrowth of briers and brush.

The surface layer of the Bibb soils is dark-gray to black loamy sand to silt loam. The subsoil is gleyed and gray. It consists of stratified fine sandy loam. Sandy alluvium is highly variable in color, texture, and degree of stratification. Unless it is covered by recently deposited yellow, yellowish-red, red, or white sand, the surface layer in most places is dark-gray to black loamy sand to silt loam containing varying amounts of partly decomposed organic material. The subsoil consists of sand, loamy sand, and thin layers of finer textured material. Its average texture is coarser than that of the subsoil of a typical Bibb soil.

These soils are moderately high in fertility and in available moisture capacity. Their organic-matter content is moderately high. Surface runoff is moderate or slow, and the erosion hazard is slight except in spots likely to be scoured by floodwaters. Sedimentation is a serious problem.

The soils in this unit are used for production of pulpwood, sawtimber, veneer, and fenceposts. Straightening of stream channels, land smoothing, and surface drainage would be necessary to make these soils suitable for pasture and row crops. (Capability unit IVw–11; woodland group C–7)

Bladen Series

Soils in the Bladen series are deep and poorly drained. They developed in fine-textured old alluvium. They occur on terraces along the Chattahoochee and Choctawhatchee Rivers and along some of the larger creeks. They are flooded several times a year. Water stands on the surface most of the winter and for periods of several days after rainfall in summer. The slope range is 0 to 2 percent. Bladen soils along the Chattahoochee River contain fine flakes of mica because they have been influenced by soil material washed from the adjacent Piedmont province.

In this county Bladen soils are associated with Dunbar and Flint soils. They are more poorly drained and more strongly gleyed than those soils.

Representative profile of Bladen silt loam (0 to 2 percent slopes) in an idle area, NW¼NE¼NE¼ sec. 11, T. 2 N., R. 29 E., near Gordon:

A1—0 to 4 inches, very dark gray (10YR 3/1) silt loam; moderate, medium, granular structure; friable when moist, slightly hard when dry, slightly sticky when wet; many fine grass roots; strongly acid; clear, smooth boundary.

A2—4 to 9 inches, gray (10YR 5/1) silt loam; weak, medium, granular structure; friable when moist, slightly sticky when wet, slightly hard when dry; few fine mica flakes; common fine grass roots; strongly acid; clear, smooth boundary.

B1g—9 to 16 inches, gray (N 6/0) silty clay with many, fine, distinct, light olive-brown (2.5Y 5/6) mottles; weak, medium, subangular blocky structure; firm when moist, plastic and slightly sticky when wet, hard when dry; few thin clay films on vertical faces of peds; few fine mica flakes; few fine grass roots; very strongly acid; gradual, smooth boundary.

B2tg—16 to 34 inches, gray (N 6/0) clay with many, medium, distinct, light olive-brown (2.5Y 5/6) mottles; moderate, medium, subangular blocky structure; very firm when moist, very plastic when wet, very hard when dry; nearly continuous clay films on faces of peds; few fine mica flakes; very strongly acid; gradual, smooth boundary.

Cg—34 to 52 inches, gray (N 6/0) clay with many, fine, distinct, light olive-brown (2.5Y 5/6) mottles and many, medium, prominent, strong-brown (7.5YR 5/8) mottles; massive; very firm when moist, very hard when dry, plastic when wet; very strongly acid.

The A horizon ranges from gray (10YR 5/1) to very dark gray (N 3/0) in color and from 7 to 12 inches in thickness. The B1g horizon ranges from sandy clay loam to silty clay in texture, and the B2tg from clay loam to clay. Mottles in the uppermost 20 inches of the argillic horizon may be yellow (5Y 7/8), brownish yellow (10YR 6/6), or light olive brown (2.5Y 5/6). The Cg horizon ranges from sandy clay loam to clay in texture. It is highly mottled with gray, yellow, and brown. In places this horizon consists of thin layers of material of varying texture. The depth to the Cg horizon ranges from 28 to 40 inches.

Bladen silt loam (0 to 10 percent slopes) (Bt).—The surface layer of this soil is gray to very dark gray silt loam 7 to 12 inches thick. The subsoil is gray, firm clay loam to clay with yellow and brown mottles. The underlying material, beginning at a depth of 28 to 40 inches, consists of mottled gray, yellow, and brown sandy clay loam to clay or of thin layers of material of varying texture. Included in the areas mapped are soils that are more poorly drained and lack the yellow and brown mottles in the upper part of the subsoil. Also included is a small acreage where the surface layer is loam or fine sandy loam.

This soil is low in fertility and high in available water capacity. Water enters and moves through this soil slowly. Surface runoff is very slow, and the erosion hazard is slight. Tilth is poor, and the soil must be worked within a narrow range of moisture content so that farm machinery will have support and traction.

Most of the acreage is in woodland. The trees are gum, cypress, other hardwoods, and pine. A small acreage is in pasture and corn. Wetness is the major limitation. (Capability unit IVw-11; woodland group C-2)

Buncombe Series

Soils in the Buncombe series are deep, sandy, and excessively drained. They developed in beds of alluvial sand and loamy sand on flood plains along the larger creeks and rivers, in areas where the stream channel is deep. They are flooded about once a year, and scouring and uneven deposition by floodwaters has roughened the surface in most places. Areas of these soils are small. The slope range is 0 to 2 percent.

In this county Buncombe soils occur with Ochlockonee and Mantachie soils. They are not so fine textured as Ochlockonee soils. They are better drained and more sandy than Mantachie soils.

Representative profile of Buncombe loamy sand (0 to 2 percent slopes), in a pasture, SW¼NW¼NW¼ sec. 35, T. 3 N., R. 29 E., near the junction of Cedar Creek and the Chattahoochee River:

Ap—0 to 11 inches, dark-brown (7.5YR 3/2) loamy sand; single grain; loose; many fine grass roots; few mica flakes; medium acid; gradual, smooth boundary.

C1—11 to 36 inches, brown (7.5YR 5/4) loamy sand; single grain; loose or very friable; few fine grass roots; many small flakes of mica; strongly acid; diffuse, smooth boundary.

C2—36 to 48 inches, pale-brown (10YR 6/3) loamy sand; single grain; loose or very friable; few flakes of mica; strongly acid; diffuse, smooth boundary.

C3—48 to 56 inches, very pale brown (10YR 7/3) sand; single grain; loose; strongly acid.

The A horizon ranges from brown (7.5YR 5/2) to very dark grayish brown (10YR 3/2) in color and from 7 to 14 inches in thickness. The C horizon ranges from pale brown (10YR 8/4) to dark yellowish brown (10YR 4/4) in color. Its texture may be loamy sand, loamy fine sand, or sand. In some places this soil is underlain by finer textured material at a depth of more than 30 inches.

Buncombe loamy sand (0 to 2 percent slopes) (Bu).—The surface layer of this soil is brown to dark grayish-brown loamy sand 7 to 14 inches thick. It is underlain by very pale brown to very dark yellowish-brown loamy fine sand, loamy sand, or sand. Layers of finer textured material occur at a depth of more than 30 inches. Included in the areas mapped are small areas that have thin layers of recently deposited white sand on the surface. Also included are spots of Ochlockonee and Mantachie soils and soils that have a more alkaline reaction.

This soil is very low in fertility and in available water capacity. Water enters and moves through it rapidly. There is no surface runoff nor erosion hazard, except when the creeks and rivers overflow.

Most of this soil is in small hardwoods, but a little of it is in pasture. Droughtiness, susceptibility to leaching, and the hazard of flooding are the main limitations. (Capability unit IIIs-11; woodland group C-6)

Carnegie Series

Soils in the Carnegie series are well drained and medium or strongly acid. They developed in beds of medium-textured and fine-textured marine deposits. They occur on side slopes and narrow ridgetops. The slope range is 2 to 12 percent. The native vegetation is longleaf pine and loblolly pine with scattered gum trees and other hardwoods.

In this county Carnegie soils are associated with Varina, Tifton, Cowarts, Dothan, and Sunsweet soils. They contain more concretions of iron oxide than Varina soils, and soft plinthite is closer to the surface than it is in Varina soils. They are less deep than Tifton soils and have a finer textured subsoil. They contain more concretions than Dothan and Cowarts soils, and they are finer textured in the upper part of the subsoil than those soils.

Representative profile of Carnegie fine sandy loam, 2 to 5 percent slopes, eroded, in a cultivated field used for peanuts, NW¼SW¼SE¼ sec. 12, T. 1 N., R. 26 E.,

three-fourths of a mile southwest of Hodgesville and 10 feet north of farm-to-market road:

Ap—0 to 7 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; few fine roots; about 8 percent of this horizon consists of small, hard, brown iron concretions; neutral (recently limed); abrupt, smooth boundary.

B21tcn—7 to 19 inches, yellowish-brown (10YR 5/8) clay loam; weak, medium, subangular blocky structure; firm when moist, sticky and slightly plastic when wet, hard when dry; about 12 percent of this horizon consists of small, hard, brown iron concretions; thin, patchy clay films on ped faces; strongly acid; diffuse, smooth boundary.

B22tcn—19 to 25 inches, yellowish-brown (10YR 5/8) clay loam with many, medium, distinct, pale-yellow (2.5Y 7/4) mottles and common, medium, distinct, red (2.5YR 5/6) mottles; very weak, medium, subangular blocky structure; firm when moist, hard when dry; soft plinthite; about 4 percent of this horizon consists of small, hard, brown iron concretions; many fine pores; strongly acid; gradual, smooth boundary.

B23t—25 to 42 inches, brownish-yellow (10YR 6/8) sandy clay with common, medium, distinct, red (10R 5/6) mottles and common, medium, faint, strong-brown (7.5YR 5/8) mottles; massive; very firm and compact when moist, slightly plastic when wet, very hard when dry; soft plinthite; few, small, soft, dark-brown iron concretions; few medium pores; strongly acid; gradual, smooth boundary.

B3t—42 to 60 inches, reticulately mottled, brownish-yellow (10YR 6/6), red (10R 4/6), yellowish-brown (10YR 5/6), yellow (2.5Y 7/6), and light-gray (2.5Y 7/2) sandy clay with thin layers, streaks, and small pockets of coarse sandy loam; massive; very firm and compact when moist, slightly plastic when wet, very hard when dry; soft plinthite; few fine and medium pores; strongly acid.

The A horizon ranges from light yellowish brown (10YR 6/4) to very dark grayish brown (10YR 3/2) in color and from 2 to 8 inches in thickness. The B21tcn horizon is yellowish-brown (10YR 5/8) to yellowish-red (5YR 5/6), friable or firm heavy sandy clay loam to sandy clay. Some profiles have a B1 horizon of sandy clay loam 2 to 5 inches thick. In these profiles the B21tcn horizon is sandy clay or clay loam. The B22tcn horizon is yellowish-brown (10YR 5/8) to yellowish-red (5YR 5/6) sandy clay loam to sandy clay mottled with red, strong brown, and very pale brown. The depth to soft plinthite ranges from 16 to 24 inches. The plinthite is highly mottled with yellowish brown, strong brown, pale brown, yellowish red, and gray. The thin layers, streaks, and small pockets of coarse sandy loam in the B3t horizon of the profile described are not present in all profiles. The content of small, hard concretions of iron oxide is as much as 25 percent of the profile in places.

Carnegie fine sandy loam, 2 to 5 percent slopes, eroded (CaB2).—The surface layer of this soil is light yellowish-brown to very dark grayish-brown fine sandy loam 2 to 6 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable or firm heavy sandy clay loam to sandy clay. Soft plinthite begins at a depth of 16 to 24 inches. It consists of very firm, compact sandy clay loam to sandy clay that is highly mottled with yellowish brown, strong brown, yellowish red, and gray. A few areas lack the soft plinthite, and in these places the soil is underlain by hard, cemented, red sandy loam that is impervious to roots and water. Included in the areas mapped are small areas where the soft plinthite is at a depth of about 30 inches. Also included are about 500 acres of less eroded soil, severely eroded spots where the surface layer is firm, yellowish-brown sandy clay loam, and small areas of Varina and Dothan soils.

This soil is low in fertility and in available water capacity. Surface runoff is medium, and the erosion hazard is moderate. Water enters the soil and moves through the subsoil at a moderate rate, but it moves slowly through the soft plinthite. Tilth is fair, but the soil must be worked within a narrow range of moisture content, or it will clod and crust. Areas that have been used several years for row crops have a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of roots and water.

This soil is well suited to a large number of crops and is used for all kinds of crops commonly grown in the county. The main limitation is the erosion hazard. (Capability unit IIIe-19; woodland group C-3)

Carnegie fine sandy loam, 5 to 8 percent slopes, eroded (CaC2).—The surface layer of this soil is yellowish-brown to grayish-brown, friable fine sandy loam 2 to 6 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable or firm heavy sandy clay loam to sandy clay. Soft plinthite begins at a depth of 16 to 24 inches. It consists of highly mottled, yellowish-brown, strong-brown, yellowish-red, and gray, very firm, compacted sandy clay loam to sandy clay. A few areas lack the soft plinthite, and in these places the soil is underlain by hard, cemented, red sandy loam that is impervious to roots and water. Included in the areas mapped are areas where the soft plinthite is at a depth of about 30 inches. Also included are severely eroded spots where the surface layer is yellowish-brown, firm sandy clay loam. Other inclusions are small areas of Dothan and Cowarts soils and a small acreage where the surface layer is more than 6 inches of loamy fine sand.

This soil is low in fertility and in available water capacity. Surface runoff is rapid, and the erosion hazard is severe. Water enters and moves through the surface layer and the subsoil at a moderate rate, but it moves slowly through the underlying material. Tilth is fair, but the soil must be worked within a narrow range of moisture content, or it will clod and crust. Areas that have been used several years for row crops have a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of roots and water.

This soil is used for all kinds of crops grown in the county. The erosion hazard is a serious limitation. (Capability unit IVe-19; woodland group C-3)

Carnegie-Sunsweet complex, 2 to 5 percent slopes, eroded (CsB2).—About 50 percent of this complex consists of Carnegie soils, 30 percent of Sunsweet soils, and the rest of Tifton, Dothan, Esto, and Orangeburg soils. The surface layer is reddish-brown to dark grayish-brown fine sandy loam. The subsoil is yellowish-brown to red heavy sandy clay loam to sandy clay in most places, but in a few areas the subsoil is clay. The mottled, somewhat compact sandy clay loam to sandy clay begins at a depth of 16 to 24 inches in the Carnegie soils, but at a depth of less than 16 inches in the Sunsweet soils. In some areas the surface layer of the Sunsweet soils rests directly on the underlying mottled material. Small iron

concretions make up as much as 30 percent of the surface layer and the subsoil of the Sunsweet soils.

These soils are low in fertility and in available water capacity. Surface runoff is medium, and the erosion hazard is moderate. Water enters the surface soil and moves through the subsoil at a moderate rate, but the mottled underlying material slows the downward movement of water. Tilth is fair to poor, and the soils must be worked within a narrow range of moisture content, or they will clod and crust.

This unit is used for production of all kinds of crops grown in the county. Droughtiness and the erosion hazard are the main limitations. (Capability unit IIIe-19; woodland group C-5)

Carnegie-Sunsweet complex, 5 to 8 percent slopes, eroded (CsC2).—About 35 percent of this complex consists of Carnegie soils, 35 percent of Sunsweet soils, and 30 percent of Tifton, Dothan, Esto, and Troup soils. The surface is rough and uneven. Rills and shallow gullies are numerous.

The surface layer is reddish-brown to dark grayish-brown sandy loam. The subsoil is yellowish-brown to red heavy sandy clay loam to sandy clay in most places, but in a few areas it is clay. Mottled, somewhat compact sandy clay loam to sandy clay begins at a depth of 16 to 25 inches in the Carnegie soils and at a depth of less than 16 inches in the Sunsweet soils. The yellowish-brown to red subsoil is lacking in many areas of Sunsweet soils, and the surface layer rests directly on the underlying mottled material. Small, hard iron concretions make up as much as 30 percent of the surface layer and the subsoil. Included in the areas mapped are areas of shallow and moderately deep soils that have a red subsoil and contain no concretions. Also included is a small acreage of severely eroded soil. A few small spots of Rough broken and stony land are mapped with this complex.

These soils are low in fertility and in available water capacity. Water enters the surface layer and moves through the subsoil at a moderate or slow rate. The underlying material slows the downward movement of water and restricts root growth. Surface runoff is medium or rapid, and the erosion hazard is severe. Tilth is fair or poor, and if worked when too wet or too dry, the soils will clod.

Most of the acreage is in pasture or woodland. A few areas are cultivated. The slope, the severe erosion hazard, and droughtiness are the major limitations. (Capability unit IVe-19; woodland group C-5)

Carnegie-Sunsweet complex, 5 to 8 percent slopes, severely eroded (CsC3).—About 30 percent of this complex consists of Carnegie soils, 60 percent of Sunsweet soils, and 10 percent of Orangeburg, Dothan, Tifton, and Esto soils. The surface is rough. Deep gullies are common, and there are many shallow gullies. Iron ore has been mined in some areas.

The surface layer is strong-brown to red sandy clay loam. The subsoil is yellowish-red to dark-red sandy clay to clay. Mottled, compact, very firm sandy loam to sandy clay is exposed in some areas of Sunsweet soils and is at a depth of 16 to 24 inches in the Carnegie soils. From 10 to 40 percent of the surface layer and the subsoil consists of iron concretions. Included in the areas mapped are some shallow areas where the subsoil is dark-red sandy clay and clay. Some of these dark-red areas contain iron ore and many cobblestones of siliceous limestone.

These soils are very low in fertility and in available water capacity. Water enters and moves through the soils slowly. Surface runoff is rapid, and the erosion hazard is severe. Tilth is poor, and the soils clod and crust when plowed.

Most of the acreage has been cleared, but many areas have reverted to woodland. A few small spots are cultivated, and some areas are in low-quality pasture. The slope, the severe erosion hazard, droughtiness, poor tilth, and the rough surface are the major limitations. (Capability unit VIe-19; woodland group C-5)

Carnegie-Sunsweet complex, 8 to 12 percent slopes, eroded (CsD2).—About 35 percent of this complex consists of Carnegie soils, 35 percent of Sunsweet soils, and 30 percent of Tifton, Esto, Cowarts, Orangeburg, and Troup soils. The surface is rough and uneven. Rills and shallows gullies are numerous.

The surface layer is reddish-brown to dark grayish-brown sandy loam. The subsoil is yellowish-brown to red heavy sandy clay loam to sandy clay. Mottling begins at a depth of 16 to 24 inches in the Carnegie soils and at a depth of less than 16 inches in the Sunsweet soils. In many areas of the Sunsweet soils in this complex, the surface layer rests directly on the mottled material. Included in the areas mapped are areas where the slope is as much as 17 percent and some spots of Rough broken and stony land.

These soils are low or very low in fertility and in available water capacity. Water enters and moves through the soils at a moderate rate. The compact underlying material slows the movement of water and restricts root growth. Surface runoff is rapid, and the erosion hazard is severe.

Most of this complex is wooded, but some is used for low-quality pasture and a few small areas are used for row crops. The slope, the erosion hazard, and droughtiness are the major limitations. (Capability unit VIe-19; woodland group C-5)

Carnegie-Sunsweet-stony land complex, 5 to 12 percent slopes (CtD).—About 35 percent of this complex consists of Carnegie soils, 25 percent of Sunsweet soils, and 20 percent of Stony land. The Carnegie soils generally occupy ridgetops and gentle side slopes. The Sunsweet soils occur on sharp slope breaks. Stony land is scattered throughout the complex. The soils occur in such an intricate pattern that it was not feasible to map them separately. Included in the areas mapped are areas of soils similar to those of the Greenville, Esto, Orangeburg, Red Bay, and Alaga series. These inclusions make up about 20 percent of the mapping unit.

The surface layer of the Carnegie and Sunsweet soils is brown to dark grayish-brown sandy loam, and the subsoil is yellowish-brown to red sandy loam to clay. The underlying material, beginning at a depth of 16 to 24 inches in the Carnegie soils and at a depth of less than 16 inches in the Sunsweet soils, consists of highly mottled, yellowish-brown, yellowish-red, strong-brown, and gray sandy clay loam to clay. Both of these soils have many concretions of iron oxide on the surface and within the soil mass. The soil material in areas of Stony land is variable in color, texture, and thickness.

The dominant characteristic of this land type is the presence of many stones, cobblestones, and boulders on the surface and within the soil mass. Most of the rocks are siliceous limestone containing fossilized seashells and other remains of marine life. In a few areas the rocks are sandstone.

The soils in this complex are low in fertility and in available water capacity. Water enters and moves through the soils at a moderate rate. The compact underlying material slows the downward movement of water and restricts root growth. Surface runoff is rapid, and the erosion hazard is severe.

Most of this complex is wooded. The trees are mainly longleaf and loblolly pines, but there are a few scattered oaks, hickories, and dogwoods. A few areas are used for pasture. Stoniness, droughtiness, the erosion hazard, and the slope are the major limitations. (Capability unit VIIe-19; woodland group C-8)

Cowarts Series

Soils in the Cowarts series are well drained. They occur on undulating ridgetops and irregular side slopes. The slope range is 2 to 12 percent.

In this county Cowarts soils are associated with Dothan, Carnegie, and Esto soils. They have a layer of soft plinthite that is nearer the surface than the plinthite in the Dothan soils. They are not so deep as Carnegie soils, and they are coarser textured in the subsoil than those soils. They are better drained than Esto soils, are browner, and have a finer textured, more friable, less plastic subsoil.

Representative profile of Cowarts fine sandy loam, 5 to 8 percent slopes, eroded, in a pasture, SW¼SW¼ SE¼ sec. 5, T. 2 N., R. 27 E., half a mile southwest of Ardilla:

Ap—0 to 4 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many small and few medium grass roots; slightly acid; abrupt, smooth boundary.

B1—4 to 8 inches, yellowish-brown (10YR 5/8) sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; about 2 percent of this horizon consists of small hard concretions of iron; medium acid; clear, smooth boundary.

B21t—8 to 17 inches, yellowish-brown (10YR 5/8) sandy clay loam; weak, medium, subangular blocky structure; firm when moist, sticky and slightly plastic when wet, hard when dry; medium acid; clear, wavy boundary.

B22t—17 to 38 inches, yellowish-brown (10YR 5/8) sandy clay loam (soft plinthite) with many, coarse, prominent, red (10R 4/8) mottles and many, medium, prominent, white (2.5Y 8/2) mottles; massive; very firm when moist, slightly sticky when wet, hard when dry; strongly acid; gradual, smooth boundary.

B23t—38 to 56 inches, reticulately mottled, brownish-yellow (10YR 6/8), yellowish-red (5YR 4/8), and yellow (2.5Y 7/6) sandy clay (soft plinthite); massive; very firm when moist, very hard when dry; slightly cemented; strongly acid.

The A horizon ranges from light yellowish brown to dark grayish brown (10YR 4/2) in color and from 2 to 6 inches in thickness. The B1 horizon ranges from brownish yellow (10YR 6/8) to strong brown (7.5YR 5/8) in color and from 4 to 6 inches in thickness. The B2t horizons range from yellowish brown to strong brown. The depth to soft plinthite is 16 to 24 inches, except in severely eroded areas, where it is generally 6 to 20 inches. The plinthite is exposed in places. This material varies greatly in texture within short distances; in some profiles it is highly mottled, compact sandy clay loam, but in others it is predominantly highly mottled clay. The B1 horizon is lacking in some profiles, and in those places the A horizon directly overlies the B2t horizon. In some places there are many small concretions of iron in the A horizon and in the upper part of the B horizon. In places, also, these soils are underlain by soft, red sandstone that is impervious to plant roots.

Cowarts fine sandy loam, 2 to 5 percent slopes, eroded (CoB2).—The surface layer of this soil is dark grayish-brown to light yellowish-brown fine sandy loam 2 to 6 inches thick. Plowing exposes the subsoil in many areas and turns up enough of the subsoil material to give the surface layer a yellowish-brown color. The subsoil is brownish-yellow to strong-brown, friable or firm sandy loam to sandy clay loam. Soft plinthite, consisting of compacted, multicolored material in layers of varying thickness and texture, begins at a depth of 16 to 24 inches. In some places the texture throughout the subsoil is finer than sandy clay loam. Rills and shallow gullies are common, and there are a few deep gullies. Included in the areas mapped are a few severely eroded spots and a small acreage where the surface layer is loamy sand. Also included are small, eroded areas of Dothan, Esto, and Carnegie soils, and about 200 acres of a less eroded phase of Cowarts soils.

This soil is low in fertility and in available water capacity. Water enters and moves through the uppermost 16 to 24 inches at a moderate rate. Below this depth the soft plinthite slows the movement of water and restricts the growth of roots. Surface runoff is medium, and the erosion hazard is moderate. Tilth is fairly good, and the soils can be worked throughout a wide range of moisture content. A few clods form if the soil is plowed when wet, but they are usually weak and easily broken. Areas that have been used several years for cultivated crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of roots and water.

This soil is used for all kinds of crops grown in the county. Droughtiness and the erosion hazard are the main limitations. (Capability unit IIIe-19; woodland group C-5)

Cowarts fine sandy loam, 5 to 8 percent slopes, eroded (CoC2).—The surface layer of this soil is dark grayish-brown to light yellowish-brown fine sandy loam 2 to 6 inches thick. The subsoil is brownish-yellow to strong-brown, friable or firm sandy loam to sandy clay loam 6 to 17 inches thick. Soft plinthite, consisting of compacted, multicolored material in layers of varying thickness and texture, begins at a depth of 16 to 24 inches. Shallow gullies are common, and there are a few deep gullies. Included in the areas mapped are small areas that are less eroded and severely eroded spots where the surface layer is yellowish brown. Also included are small eroded areas of Dothan, Esto, and Carnegie soils.

This soil is low in fertility and in water-holding capacity. Water enters and moves through the uppermost 16 to 24 inches at a moderate rate, but the compacted material slows its movement. Surface runoff is rapid,

and the erosion hazard is severe. Tilth is fair to good, and the soil can be worked throughout a wide range of moisture content. A few clods form if the soil is plowed when wet, but they are usually weak and easily broken. Areas that have been used several years for cultivated crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water.

This soil is used for all kinds of crops grown in the county. Droughtiness and the severe erosion hazard are the main limitations. (Capability unit IVe-19; woodland group C-5)

Cowarts fine sandy loam, 5 to 8 percent slopes, severely eroded (CoC3).—The surface layer of this soil is brown to yellowish-brown fine sandy loam. The subsoil is yellowish-brown heavy sandy loam to sandy clay loam. Compacted, multicolored soft plinthite generally begins at a depth of 6 to 20 inches. In some places it begins at a depth of less than 6 inches, and in spots it is exposed. Included in the areas mapped are small areas of severely eroded Esto and Dothan soils. Also included are small areas where the surface layer is thin and grayish brown, and other small areas where the surface layer is yellowish-brown sandy clay loam or sandy clay.

This soil is low in available water capacity. Water enters and moves through the soil at a moderate or slow rate. Roots penetrate to a depth of about 3 feet, except in spots where there is sandstone. Surface runoff is rapid, and the erosion hazard is severe. Tilth is poor.

This soil is used mainly for pasture and woodland. Small areas are cultivated, but yields are generally low. Droughtiness and the erosion hazard are the main limitations. (Capability unit VIe-19; woodland group C-5)

Cowarts fine sandy loam, 8 to 12 percent slopes, eroded (CoD2).—The surface layer of this soil is grayish-brown to light yellowish-brown fine sandy loam 3 to 6 inches thick. The subsoil is yellowish-brown heavy sandy loam to sandy clay loam. Interbedded layers of soft plinthite, consisting of compacted, multicolored material of varying texture, begin at a depth of 16 to 24 inches. In some areas this material begins at a depth of less than 16 inches, and in spots it is exposed. Included in the areas mapped are small areas of Esto, Dothan, and Carnegie soils. Also included are spots that are severely eroded.

This soil is low in available water capacity. Water enters and moves through the soil at a moderate rate. Roots penetrate to a depth of about 3 feet, except in spots where there is sandstone. Surface runoff is rapid, and the erosion hazard is severe. Tilth is fair.

This soil is used mainly for pasture and woodland. Droughtiness and the erosion hazard are the main limitations. (Capability unit VIe-19; woodland group C-5)

Dothan Series

Soils in the Dothan series are deep, well drained, and medium acid or strongly acid. They developed in thick beds of medium-textured marine deposits. They occur on uplands as broad flats, level ridgetops, and gentle side slopes. The slope range is 0 to 8 percent. The native vegetation consists of longleaf pine, loblolly pine, and a little oak, hickory, and dogwood.

In this county, Dothan soils are associated with Orangeburg, Varina, Tifton, and Alaga soils. Their subsoil is more yellowish and less reddish than that of Orangeburg soils. They have a thicker surface layer than Varina soils, a less abrupt boundary between the surface layer and the subsoil, and a less fine-textured subsoil. In most places Dothan soils have a coarser textured subsoil than Tifton soils, and they lack the concretions that are common in Tifton soils. They are less sandy than Alaga soils.

Representative profile of Dothan loamy sand, 2 to 5 percent slopes, in a cultivated area, NE¼SW¼SE¼ sec. 20, T. 3 N., R. 27 E., within the city limits of Dothan:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; strongly acid; abrupt, smooth boundary.

B1—6 to 13 inches, yellowish-brown (10YR 5/6) sandy loam; very weak, medium, subangular blocky structure; very friable when moist; uppermost 2 inches of this horizon is a massive, brittle plowpan; strongly acid; gradual, smooth boundary.

B21t—13 to 28 inches, yellowish-brown (10YR 5/8) sandy clay loam; weak, medium, subangular blocky structure; firm when moist, slightly plastic when wet, hard when dry; thin, discontinuous clay films on surfaces of peds; strongly acid; diffuse, smooth boundary.

B22t—28 to 33 inches, yellowish-brown (10YR 5/8) sandy clay loam with common, medium, distinct mottles of strong brown (7.5YR 5/8) and yellowish red (5YR 4/8); weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, hard when dry; thin, discontinuous clay films on surfaces of peds; strongly acid; clear, wavy boundary.

Bx—33 to 60 inches +, mottled yellowish-brown (10YR 5/8), strong-brown (7.5YR 5/8), red (2.5YR 4/8), yellow (10YR 7/8), and white (10YR 8/2) sandy clay loam [the grayer parts are sandy clay, and the redder parts are strongly acid, cemented sandy loam (soft plinthite)]; massive; very firm and compact when moist, very hard when dry, gray and yellow mottled parts are plastic when wet; strongly acid.

The A horizon ranges from grayish brown (10YR 5/2) to very dark grayish brown (10YR 3/2) in color and is loamy sand in texture. It ranges from 6 to 17 inches in thickness, except in eroded areas where it is as little as 2 inches thick. The B1 horizon ranges from brownish yellow (10YR 6/6) to yellowish brown (10YR 5/8) in color. The B2t horizons range from brownish yellow (10YR 6/6) to yellowish brown (10YR 5/8) in color and from sandy clay loam to light sandy clay in texture. The depth to the horizon containing plinthite ranges from 24 to more than 50 inches. The texture of this horizon ranges from sandy loam to sandy clay.

Dothan loamy sand, 0 to 2 percent slopes (DoA).—The surface layer of this soil is grayish-brown to dark grayish-brown loamy sand 6 to 12 inches thick. The upper part of the subsoil is brownish-yellow to yellowish-brown, friable sandy loam, and the lower part is yellowish-brown, friable sandy clay loam. Firm, compacted, highly mottled sandy clay loam to sandy clay begins at a depth of 30 to 50 inches. Included in the areas mapped are areas where the surface layer is sandy loam. Also included are spots where the surface layer consists of more than 12 inches of grayish-brown loamy sand.

This soil is low in fertility and low to moderately high in available water capacity. Water enters and moves

through the profile at a moderate or rapid rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

Most of the acreage is used for crops. Areas that have been used several years for cultivated crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the movement of water and restricts the growth of roots. There are no serious limitations. (Capability unit I–12; woodland group C–3)

Dothan loamy sand, 2 to 5 percent slopes (DoB).—The surface layer of this soil is grayish-brown to very dark grayish-brown loamy sand 6 to 17 inches thick. The upper part of the subsoil is brownish-yellow to yellowish-brown friable sandy loam, and the lower part is yellowish-brown friable sandy clay loam to light sandy clay. The underlying material, beginning at a depth of 24 to more than 50 inches, consists of firm, compacted, reticulately mottled sandy clay loam to sandy clay. In many areas where the depth to the underlying material is more than 35 inches, there is a layer of friable, yellowish-brown sandy loam at the lower limit of the subsoil. Included in the areas mapped are areas where the surface layer consists of as much as 12 inches of sandy loam. Also included are eroded spots where the surface layer is grayish brown and is less than 6 inches thick.

This soil is low in fertility and in available water capacity. Water enters and moves through the profile at a moderate or rapid rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

Most of the acreage is used for crops. Areas that have been used several years for row crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the movement of water and restricts the growth of roots. The erosion hazard is the major limitation. (Capability unit IIe–12; woodland group C–3)

Dothan loamy sand, 2 to 5 percent slopes, eroded (DoB2).—The surface layer of this soil is light yellowish-brown to dark grayish-brown, friable loamy sand 2 to 6 inches thick. The upper part of the subsoil is brownish-yellow to yellowish-brown, friable sandy loam, and the lower part is yellowish-brown, friable sandy clay loam to firm light sandy clay. The underlying material consists of firm, compacted, reticulately mottled sandy loam to sandy clay beginning at a depth of 24 to more than 50 inches. In many areas where the depth to the underlying material is more than 35 inches, there is a layer of friable, yellowish-brown sandy loam or loam at the lower limit of the subsoil. Included in the areas mapped are severely eroded spots where the yellowish-brown subsoil is exposed, areas where the surface layer consists of sandy loam, and spots where the surface layer is less eroded and consists of more than 6 inches of grayish-brown sandy loam.

This soil is low in fertility and low to moderately high in available water capacity. Water enters and moves through this soil at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Most of the acreage is used for crops. Areas that have been used several years for row crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots. Erosion is the major limitation. (Capability unit IIe–12; woodland group C–3)

Dothan loamy sand, 5 to 8 percent slopes, eroded (DoC2).—The surface layer of this soil is light yellowish-brown to dark grayish-brown, friable loamy sand 2 to 6 inches thick. The upper part of the subsoil is brownish-yellow to yellowish-brown, friable sandy loam, and the lower part is yellowish-brown, friable sandy clay loam to firm sandy clay. The firm, compacted, reticulately mottled underlying material begins at a depth of 24 to 40 inches. Rills and shallow gullies are numerous, and there are a few deep gullies. Included in the areas mapped are severely eroded spots where the surface layer is yellowish-brown sandy loam or sandy clay loam, and some less eroded spots where the surface layer consists of more than 6 inches of grayish-brown fine sandy loam. Also included are some areas where the underlying material begins at a depth of less than 24 inches.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is rapid, and the erosion hazard is severe. Tilth is good.

Some of the acreage is used for row crops, but yields are usually low. Slope and the severe erosion hazard are the major limitations. Operating heavy farm machinery on the strong slopes and across the shallow gullies is a problem. (Capability unit IIIe–12; woodland group C–3)

Dunbar Series

Soils in the Dunbar series are deep, somewhat poorly drained, and strongly acid. They developed in thick beds of unconsolidated, stratified layers of marine-deposited clay, sandy clay, and sandy loam. They occur on uplands and stream terraces in areas where the slope is 0 to 5 percent. Some of the areas are subject to flooding. The native vegetation consists of longleaf pine, gallberry, briers, and wiregrass.

In this county Dunbar soils are associated with Ardilla, Grangeburg, Varina, Grady, Esto, and Flint soils. They closely resemble Ardilla soils in color but have a thinner surface layer than those soils and a finer textured subsoil. They are less well drained than Grangeburg soils and are finer textured. Their surface layer is darker than that of Varina soils, and their subsoil is more mottled. They are better drained and less grayish than Grady soils. Dunbar soils occur as larger areas than Esto soils, and they have a more friable B horizon than those soils. They are less well drained than some areas of Esto soils. They are less well drained than Flint soils and are less sandy in the lower part of the subsoil.

Representative profile of Dunbar fine sandy loam, 0 to 2 percent slopes, in a pasture of bahiagrass, SW¼SW¼ SW¼ sec. 18, T. 3 N., R. 28 E., near a white post 50 yards east-southeast of a dug pond:

Ap—0 to 7 inches, olive-gray (5Y 4/2) fine sandy loam; weak, fine, granular structure; very friable when moist, slightly sticky when wet; many medium and fine

grass roots; strongly acid; abrupt, smooth boundary.

B21t—7 to 14 inches, yellow (2.5Y 7/6) sandy clay; weak, medium, subangular blocky structure; firm when moist, plastic and slightly sticky when wet, hard when dry; patchy clay films on vertical faces of peds; few medium grass roots and abundant fine grass roots; abundant medium and fine root channels; many medium and small pores; some translocation of material from the Ap horizon through old root channels; strongly acid; gradual, smooth boundary.

B22tg—14 to 32 inches, light-gray (5Y 7/2) clay with common, medium, prominent mottles of red (2.5YR 5/8) and common, medium, faint mottles of olive yellow (2.5Y 6/8); moderate, medium, subangular blocky structure; very firm when moist, plastic when wet, very hard when dry; nearly continuous clay films on vertical faces of peds; few small grass roots; few small root channels; few small and medium pores; strongly acid; gradual, smooth boundary.

B3g—32 to 58 inches +, mottled light-gray (5Y 7/2), red (2.5YR 5/8), pale-yellow (2.5Y 7/4), and olive-yellow (5Y 6/8) clay; massive to weak, coarse, subangular blocky structure; very firm when moist, plastic when wet, extremely hard when dry; few medium pores; patchy clay films; compact; few, thin, vertical and horizontal streaks of coarse sandy clay; strongly acid.

The A horizon ranges from light olive gray (5Y 6/2) to very dark gray (10YR 3/1) in color and from 6 to 10 inches in thickness. In some areas there is a B1 horizon consisting of 3 to 7 inches of pale-yellow to light yellowish-brown sandy loam. The B21t horizon ranges from pale yellow (5Y 7/3) to light olive brown (2.5Y 5/4) in color and from 5 to 20 inches in thickness. It ranges from heavy sandy clay loam to sandy clay in texture. The color of the B21t horizon ranges from pale yellow (5Y 7/3) to olive yellow (2.5Y 6/8). The depth to mottled material ranges from 12 to 20 inches. The C horizon begins at a depth of 28 to 40 inches. It consists of material of varying color, texture, and degree of mottling. In some places the material of the C horizon is clay to a depth of more than 52 inches; in other places the C horizon consists of stratified sandy loam, sandy clay loam, sandy clay, and clay.

Dunbar fine sandy loam, 0 to 2 percent slopes (DuA).—The surface layer of this soil is light olive-gray to very dark gray, very friable fine sandy loam 6 to 10 inches thick. The upper part of the subsoil is pale-yellow to light olive-brown, friable or firm heavy sandy clay loam to sandy clay, and the lower part is mottled gray, brownish-yellow, and red, firm or very firm clay loam to clay. Interbedded layers of multicolored clay, sandy clay, and sandy loam begin at a depth of 28 to 40 inches. Included in the areas mapped is a small acreage where the surface layer is loam or loamy sand. In some of the areas where the texture is loamy sand, the surface layer is more than 10 inches thick. Also included are small areas that are more poorly drained and small areas that are better drained.

This soil is low in fertility and moderately high in available water capacity. Water enters this soil at a moderate rate, but it moves through the subsoil slowly. Surface runoff is very slow. Tilth is fair, but the soil clods if worked when too wet or too dry. When wet, the soil does not afford traction and support for farm machinery.

This soil is used for pasture, truck crops, corn, and woodland. Wetness is the main limitation. (Capability unit IIw–17; woodland group C–4)

Dunbar fine sandy loam, 2 to 5 percent slopes (DuB).—The surface layer of this soil is gray to very dark gray, very friable fine sandy loam 6 to 10 inches thick. The upper part of the subsoil is olive-yellow to brownish-yellow, friable or firm heavy sandy clay loam to clay loam, and the lower part is gray, mottled, firm or very firm sandy clay to clay. Interbedded layers of multicolored clay, sandy clay, and sandy loam begin at a depth of 28 to 40 inches. Included in the areas mapped is a small acreage where the surface layer is loamy sand or loam. In some of the areas where the texture is loamy sand, the surface layer is 10 to 20 inches thick. Also included are small areas that are better drained and some that are more poorly drained.

This soil is low in fertility and moderately high in available water capacity. Water enters this soil at a moderate rate, but it moves slowly through the subsoil. Surface runoff is medium, and the erosion hazard is moderate. Tilth is fair, but the soil clods if worked when too wet or too dry. When wet, the soil does not afford traction and support for farm machinery.

This soil is used for pasture, truck crops, corn, and woodland. Erosion and wetness are the major limitations. (Capability unit IIe–16; woodland group C–4)

Dunbar fine sandy loam, overflow, 0 to 2 percent slopes (DvA).—The surface layer of this soil is gray to very dark grayish-brown fine sandy loam 6 to 12 inches thick. The subsoil is yellow to yellowish-brown clay loam to clay with gray and red mottles at a depth of 12 to 22 inches. Highly mottled sandy clay loam to clay or thinly stratified layers of varying texture begin at a depth of 26 to 40 inches. Beds of sand or mixed sand and gravel begin at a depth of 50 to 70 inches in some places. Included in the areas mapped are small areas of Flint and Bladen soils and a small acreage where the surface layer is loamy fine sand 7 to 15 inches thick. Also included is a small acreage where the subsoil is sandy clay loam.

This soil is low in fertility and moderately high in available water capacity. Water enters the surface layer at a moderate rate, but it moves through the subsoil slowly. Surface runoff is very slow, and the erosion hazard is slight. Tilth is fair, but the soil clods if worked when too wet or too dry. When wet, the soil does not afford traction and support for farm machinery. Seedbed preparation usually has to be delayed because of wetness. This soil is flooded in winter about 1 year out of 3.

This soil is used mainly for pasture, woodland, and corn. Wetness is the major limitation. (Capability unit IIw–17; woodland group C–9)

Esto Series

Soils in the Esto series are well drained. They have a shallow or moderately deep root zone. They developed in coarse-textured and fine-textured marine deposits. They occur mainly on knobs, short side slopes, and low ridgetops where the slope is 2 to 17 percent.

In this county Esto soils are associated with Alaga, Dothan, Dunbar, and Orangeburg soils. They are finer

textured and less friable than Alaga, Dothan, and Orangeburg soils and have a shallower root zone. They are less friable and better drained than Dunbar soils, and their root zone is shallower.

Representative profile of Esto loamy sand, 2 to 5 percent slopes, in a pasture of bahiagrass, SW¼SE¼NE¼ sec. 30, T. 1 N., R. 27 E., three-fourths of a mile southeast of Madrid:

Ap—0 to 5 inches, grayish-brown (10YR 5/2) loamy sand; single grain; loose or very friable; many fine and medium grass roots; neutral; abrupt, smooth boundary.

A2—5 to 10 inches, brownish-yellow (10YR 6/6) loamy sand; single grain; very friable; many small grass roots; slightly acid; gradual, smooth boundary.

B21t—10 to 15 inches, brownish-yellow (10YR 6/6) sandy clay; weak, medium, subangular blocky structure; firm when moist, hard when dry, plastic when wet; few thin clay films on faces of peds; few small pores; many grass roots and root channels; slightly acid; gradual, smooth boundary.

B22tg—15 to 20 inches, brownish-yellow (10YR 6/6) clay with common, medium, prominent, white (10YR 8/1) mottles and common, medium, prominent, dark-red (10R 3/6) mottles; moderate, medium, subangular blocky structure; very firm when moist, very hard when dry, plastic when wet; nearly continuous clay films on surfaces of peds; few small pores; abundant grass roots; medium acid; lower half inch of this horizon consists of organic-stained sandy clay, laterally interbedded with matted roots of bahiagrass; abrupt, wavy boundary.

B23tg—20 to 43 inches, yellowish-brown (10YR 5/8) sandy clay with many mottles of dark red (10R 3/6), white (10YR 8/2), and olive yellow (2.5Y 6/6); weak, medium, subangular blocky structure; very firm when moist, very hard when dry; patchy clay films on faces of peds; medium acid; gradual, smooth boundary.

B3—43 to 72 inches, pale-red (10R 6/3) sandy loam with common, coarse, distinct mottles of white (10YR 8/1) and common, medium, distinct mottles of yellowish brown (10YR 5/8); structureless (massive); firm when moist, very hard when dry; spots of white sandy clay; sand grains coated and bridged; about 2 percent of this horizon consists of small, rounded quartz pebbles; strongly acid.

The A horizon ranges from light gray (10YR 7/2) through light yellowish brown (10YR 6/4) to dark gray (N 4/0) in color, from loamy sand to sandy clay loam in texture, and from 2 to 18 inches in thickness. The B horizon is light brownish-gray (2.5Y 6/2), strong-brown (7.5YR 5/8), or yellowish-red (5YR 5/8) very firm sandy clay to clay 3 to 20 inches thick.

Esto loamy sand, 2 to 5 percent slopes (EsB).—The surface layer of this soil is gray to dark-gray loamy sand 6 to 18 inches thick. In most places the subsoil is light brownish-gray to strong-brown, very firm sandy clay to clay about 3 to 20 inches thick. Interbedded layers of multicolored cemented sand, sandy clay, and clay begin within 36 inches of the surface. In some places the surface layer directly overlies the multicolored material. Included in the areas mapped are small eroded areas where the surface layer is yellowish brown. Also included are small areas where the surface layer is more than 18 inches thick.

This soil is low in fertility and in available water capacity. Water enters the surface layer rapidly, but it moves through the subsoil slowly. In many places root growth is restricted.

This soil is used for all kinds of crops commonly grown in the county. Crops are usually damaged by lack of moisture, because of the low available water capacity and the shallow root zone. The erosion hazard is moderately severe. (Capability unit IIIe–19; woodland group C–5)

Esto loamy sand, 2 to 5 percent slopes, eroded (EsB2).—The surface layer of this soil is dark-gray to light yellowish-brown loamy sand 4 to 7 inches thick. The subsoil is pale-yellow to strong-brown, very firm sandy clay to clay, mottled with gray; it is 5 to 20 inches thick. Interbedded layers of multicolored cemented sand, sandy clay, and clay begin at a depth of 9 to 27 inches. Included in the areas mapped are a few less eroded areas and some areas that are severely eroded. Also included are small areas where the surface layer is more than 7 inches thick.

This soil is low in fertility and in available water capacity. Water enters the surface layer rapidly, but it moves through the subsoil slowly. In many places the growth of roots is retarded. Surface runoff is medium, and the erosion hazard is moderate. Tilth is poor. This soil is hard when dry, and it forms hard clods if plowed when wet.

This soil is used for all kinds of crops commonly grown in the county. Crops are usually damaged by lack of moisture, because of the low available water capacity and the restricted root zone. (Capability unit IIIe–19; woodland group C–5)

Esto loamy sand, 5 to 8 percent slopes, eroded (EsC2).—The surface layer of this soil is dark-gray to light yellowish-brown loamy sand 2 to 7 inches thick. The subsoil is pale-yellow to strong-brown, very firm sandy clay to clay mottled with gray; it is 5 to 20 inches thick. Interbedded layers of multicolored, cemented sand, sandy clay, and clay begin at a depth of 9 to 27 inches. Most areas of this soil are less than 20 acres in size. Shallow gullies are common, and there are a few deep gullies. Included in the areas mapped are areas that are less eroded, a few areas that are severely eroded, and small areas where the surface layer is more than 7 inches thick.

This soil is low in fertility and in available water capacity. Water enters the surface layer rapidly but moves through the subsoil slowly. In many places growth of roots is restricted. Surface runoff is rapid, and the erosion hazard is severe. This soil is hard when dry and must be worked within a narrow range of moisture content or it will clod.

Only a small part of the acreage is cultivated. Crops are usually damaged by lack of moisture, because of the low available water capacity and the restricted root zone. (Capability unit VIe–19; woodland group C–5)

Esto soils, 8 to 12 percent slopes, severely eroded (EtD3).—The surface layer of these soils is gray to yellowish-red loamy sand to sandy clay loam 2 to 5 inches thick. The subsoil is pale-yellow to yellowish-red, very firm sandy clay to clay mottled with gray; it is 5 to 12 inches thick. Interbedded layers of multicolored, cemented sand, sandy clay, and clay begin at a depth of 7 to 17 inches. These soils generally occur where the topography is broken. In most places they occupy areas less than 20 acres in size. Rills and shallow gullies are common. Included in the areas mapped is a small acreage of less

eroded soils. Also included are areas where the slope is as much as 17 percent.

These soils are very low in fertility and in available water capacity. Water enters and moves through the subsoil slowly. Surface runoff is rapid, and the erosion hazard is severe.

These soils are used mainly for timber. Some areas support sparse stands of pasture grasses. Droughtiness and the severe erosion hazard are limitations. (Capability unit VIIe-19; woodland group C-5)

Faceville Series

Soils in the Faceville series are deep, well drained, and medium acid or strongly acid. They developed in thick beds of unconsolidated marine deposits. The slope range is 0 to 5 percent. The native vegetation consists chiefly of longleaf and loblolly pine but includes some oak, hickory, and dogwood.

In this county Faceville soils are associated with Orangeburg, Varina, Tifton, and Greenville soils. They are finer textured throughout the profile than Orangeburg soils. They are similar in texture and horizonation to Varina and Greenville soils. They are redder than Varina soils but less reddish than Greenville soils. They lack iron concretions, which are plentiful in Tifton soils.

Representative profile of Faceville fine sandy loam, 2 to 5 percent slopes, eroded, in a cultivated field, SW¼SE¼NE¼ sec. 28, R. 24 E., T. 3 N.:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) fine sandy loam; very weak, fine, granular structure; very friable; contains some material from the B1 horizon; medium acid; abrupt, smooth boundary.

B1—6 to 9 inches, strong-brown (7.5YR 5/8) sandy clay loam; very weak, medium, subangular blocky structure; very friable; strongly acid; clear, smooth boundary.

B2t—9 to 40 inches, yellowish-red (5YR 4/8) clay loam; weak, medium, subangular blocky structure; friable when moist, sticky when wet, hard when dry; few, thin, patchy clay films on vertical faces of peds; many fine pores; strongly acid; gradual, smooth boundary.

B3t—40 to 58 inches, strong-brown (7.5YR 5/8) light sandy clay loam with common, medium, distinct, brownish-yellow (10YR 6/8) mottles; very weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, hard when dry; common fine pores; few, soft, brown concretions of iron; strongly acid.

The A horizon ranges from very dark grayish brown (10YR 3/2) to brown (10YR 5/3) in color and from 2 to 9 inches in thickness. The B1 horizon is lacking in some profiles. Where present, it ranges from strong brown (7.5YR 5/6) to yellowish red (5YR 4/6) in color, from heavy sandy loam to sandy clay loam in texture, and from 2 to 8 inches in thickness. The B2t horizon ranges from yellowish red (5YR 5/6) to red (2.5YR 4/8) in color, from clay loam to sandy clay in texture, and from 10 to 35 inches in thickness.

Faceville fine sandy loam, 0 to 2 percent slopes (FaA).—The surface layer of this soil is dark grayish-brown to grayish-brown fine sandy loam 6 to 9 inches thick. The upper part of the subsoil is strong-brown to yellowish-red, friable sandy clay loam, and the lower part is yellowish-red to red, friable clay loam to firm sandy clay. Small iron concretions make up as much as 10 percent of the soil mass, and there are a few white quartz pebbles in some places. Included in the areas mapped is a small acreage of Orangeburg, Tifton, and Varina soils. Also included are a few spots where the surface layer is loamy sand.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting. Areas that have been cultivated year after year have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

This soil is used for all kinds of crops grown in the county. There are no serious limitations. (Capability unit I-11; woodland group C-3)

Faceville fine sandy loam, 2 to 5 percent slopes, eroded (FaB2).—The surface layer of this soil is grayish-brown to yellowish-brown fine sandy loam 2 to 6 inches thick. The upper part of the subsoil is strong-brown to yellowish-red, friable sandy clay loam, and the lower part is yellowish-red to red, friable or firm clay loam to sandy clay. Included in the areas mapped is about 600 acres of less eroded soil where the surface layer is 6 to 9 inches thick.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is good, but the soil must be worked within a narrow range of moisture content or it will clod. In areas that have been used year after year for row crops, a traffic pan has formed at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

This soil is used for all kinds of crops commonly grown in this county. The erosion hazard is the major limitation. (Capability unit IIe-11; woodland group C-3)

Flint Series

Soils in the Flint series are deep and moderately well drained. They developed in beds of fine-textured stream deposits. They occur on terraces along the Chattahoochee and Choctawhatchee Rivers in areas where the slope is 0 to 5 percent. They are subject to flooding during periods of heavy rainfall. The water table is at or near the surface in winter but recedes to a depth of more than 20 feet in fall. Flint soils along the Chattahoochee River contain many fine flakes of mica because they have been influenced by soil material washed from the adjacent Piedmont province. The native vegetation consists mainly of longleaf, loblolly, and slash pine but includes oak, hickory, gum, dogwood, and other hardwoods.

In this county Flint soils are associated with Wickham, Maxton, and Dunbar soils. They are less well drained than Wickham soils and are more mottled and finer textured in the lower part of the subsoil. They are less well drained, finer textured, and more mottled than Maxton soils. They are better drained and redder than Dunbar soils.

Representative profile of Flint fine sandy loam, 0 to 2 percent slopes, in a pasture, SW¼SE¼SW¼SW¼ sec. 15, T. 1 N., R. 30 E., in the southeastern part of the county:

Ap—0 to 6 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, medium, granular structure; very friable; many grass roots; strongly acid; clear, smooth boundary.

B21t—6 to 10 inches, yellowish-red (5YR 5/6) sandy clay; weak, medium, subangular blocky structure; friable when moist, slightly hard when dry, sticky and slightly plastic when wet; many root channels and wormholes filled with material from the Ap horizon; few patchy clay skins on vertical faces of peds; strongly acid; gradual, smooth boundary.

B22t—10 to 24 inches, reddish-brown (2.5YR 4/4) clay; few, fine, light brownish-gray (10YR 6/2) mottles in lower 6 inches; weak, coarse, subangular blocky structure and moderate, medium, subangular blocky structure; hard when dry, very firm when moist, plastic and slightly sticky when wet; continuous clay films on faces of peds; common fine mica flakes; strongly acid; gradual, smooth boundary.

B23t—24 to 44 inches, reddish-brown (2.5YR 4/4) clay with common, fine, distinct, pale-olive (5Y 6/4) mottles and common, medium, prominent, light-gray (N 7/0) mottles; moderate, medium, subangular blocky structure and weak, fine, subangular blocky structure; hard when dry, very firm when moist, plastic and slightly sticky when wet; nearly continuous clay films on faces of peds; common fine mica flakes; gray mottles are more plentiful in lower part of horizon; strongly acid; gradual, smooth boundary.

C1—44 to 52 inches, mottled light-red (2.5YR 6/6), reddish-brown (2.5YR 4/4), and light-gray (N 7/0) sandy loam; massive; firm when moist, slightly plastic when wet; gray color deepens as depth increases; very strongly acid.

The A horizon ranges from gray (10YR 5/1) to dark grayish brown (10YR 4/2) in color and from 6 to 15 inches in thickness. The B horizon ranges from yellowish red (5YR 5/6) to reddish brown (2.5YR 4/4) in color, from clay loam to clay in texture, and from 15 to 38 inches in thickness. The depth to mottling ranges from 17 to 27 inches. The C horizon consists of highly mottled gray, yellow, and red heavy sandy loam to sand. It is gravelly in places. The depth to the C horizon ranges from 36 to 50 inches.

Flint fine sandy loam, 0 to 2 percent slopes (FlA).—The surface layer of this soil is gray to dark grayish-brown fine sandy loam 6 to 15 inches thick. The subsoil is strong-brown to reddish-brown, firm clay loam to clay with gray, yellow, and pale-brown mottles beginning at a depth of 17 to 26 inches. This soil is underlain by sandy loam, loamy sand, or sand and gravel at a depth of 40 to 50 inches. Included in the areas mapped are areas where the surface layer is loam, spots where the surface layer is more than 7 inches of loamy sand, and some areas where the texture is clay loam to clay to a depth of 50 inches or more. Also included are small areas of Wickham and Dunbar soils.

This soil is low in fertility and moderately high in available water capacity. Water enters the soil at a moderate rate but moves through the subsoil slowly. Surface runoff is slow or very slow, and the erosion hazard, where it exists, is slight. Tilth is good, but the soil will clod and crust if worked when too wet or too dry. Excess moisture usually delays preparation for planting.

This soil is used mostly for pasture and woodland, but a small acreage is used for row crops. Wetness is the major limitation. (Capability unit IIw-17; woodland group C-9)

Flint fine sandy loam, 2 to 5 percent slopes (FlB).—The surface layer of this soil is gray to dark grayish-brown fine sandy loam 6 to 15 inches thick. The subsoil is strong-brown to reddish-brown, firm clay loam to clay mottled with gray, yellow, and pale brown at a depth of 17 to 27 inches. Sandy loam, loamy sand, or sand and gravel begin at a depth of 35 to 50 inches. Included in the areas mapped are some areas where the surface layer consists of 9 to 20 inches of loamy sand, eroded areas where the surface layer is yellowish red or reddish brown and less than 6 inches thick, and areas where the texture is clay loam to clay to a depth of more than 50 inches. Also included are small areas of Wickham and Dunbar soils.

This soil is low in fertility and moderately high in available water capacity. Water enters the soil at a moderate rate but moves through the subsoil slowly. Surface runoff is slow or medium, and the erosion hazard is moderate. Tilth is good, but the soil will clod and crust if worked when too wet or too dry. Excess moisture usually delays preparation for planting. Terraces are not suitable, because this soil occurs on short slopes and low, narrow ridgetops or knolls.

This soil is used mostly for pasture and woodland, but a small acreage is used for row crops. The erosion hazard and wetness are the major limitations. (Capability unit IIe-16; woodland group C-9)

Grady Series

Soils in the Grady series are deep and poorly drained. They developed in fine-textured marine deposits. They occur in small, rounded depressions and on broad flats along gently flowing streams in the uplands. The native vegetation consists of gum, cypress, and pine, an understory of gallberry, waxmyrtle, and other water-tolerant plants, and a ground cover of wiregrass.

In this county Grady soils are associated with Varina, Tifton, Faceville, Greenville, Dothan, and Orangeburg soils. They are more poorly drained than Varina, Tifton, Faceville, and Greenville soils and are finer textured and more poorly drained than Dothan and Orangeburg soils. Grady soils are similar to Pansey and Bladen soils, but generally, they are not so strongly acid as those soils. They are finer textured than Pansey soils, and their horizonation is less well developed. Their surface layer is more varied in texture than that of Bladen soils, and their position on the landscape differs.

Representative profile of Grady silt loam (0 to 2 percent slopes) in a pasture of native grasses, NW¼NE¼NE¼ sec. 12, T. 2 N., R. 28 E., 0.4 mile north of Pansey, 100 yards east of the intersection of paved roads, and 25 yards south of road:

A1—0 to 4 inches, very dark gray (N 3/0) silt loam; weak, fine, granular structure; friable when moist, slightly plastic and sticky when wet; medium acid; clear, smooth boundary.

A2—4 to 9 inches, dark-gray (N 4/0) silt loam; weak, fine, granular structure; friable when moist, sticky and slightly plastic when wet, slightly hard when dry; medium acid; gradual, smooth boundary.

B21g—9 to 20 inches, gray (N 6/0) silty clay with many, medium, distinct, pale-brown (10YR 6/3) mottles; weak, medium, subangular blocky structure; firm when moist, plastic and slightly sticky when wet, hard when dry; few patchy clay films on faces of peds; few small pores; medium acid; gradual, smooth boundary.

B22tg—20 to 34 inches, gray (5Y 6/1) clay with many, medium, distinct, brownish-yellow (10YR 6/8) mottles; weak to moderate, medium, subangular blocky structure; very firm when moist, plastic when wet, very hard when dry; many clay films on vertical and horizontal faces of peds; medium acid; gradual, smooth boundary.

Cg—34 to 48 inches, gray (5Y 6/1) sandy clay with common, medium, distinct, brownish-yellow (10YR 6/8) mottles and few, coarse, prominent, reddish-brown (2.5YR 5/4) mottles; massive; very hard when dry, very firm when moist, plastic when wet; common thin streaks of light-gray sand; few small pores; medium acid.

The A horizon ranges from gray (N 5/0) to black (N 2/0) in color, from sandy loam to silty clay loam in texture, and from 7 to 12 inches in thickness. The B horizon ranges from clay loam to clay in texture. It is mottled with brown, yellow, red, and white. The underlying material consists of gray sandy loam to clay mottled with brown, yellow, and red. The depth to this material ranges from 30 to 50 inches.

Grady soils (0 to 2 percent slopes) (Gd).—The surface layer of these soils is gray to black, friable sandy loam to silty clay loam 7 to 12 inches thick. The subsoil is gray clay loam to clay with brown, yellow, white, and red mottles. Mottled gray, brown, yellow, and red sandy loam to clay begins at a depth of 30 to 50 inches. Included in the areas mapped are areas where as much as 12 inches of muck or peaty muck is on the surface.

These soils receive much water in the form of runoff from adjacent, higher lying areas. Surface runoff from the larger areas is very slow, and the smaller areas are usually ponded in winter and in the early part of spring. The water table is never more than 3 feet below the surface.

These soils are moderately high in fertility and in available water capacity. Their organic-matter content is moderately high. Water enters and moves through these soils very slowly. Tilth is poor.

These soils are used mostly for pasture or woodland. Some of the large flats make excellent summer pasture if properly managed, but surface drainage is needed to make the small areas suitable for row crops. Many small areas are idle. Wetness is the major limitation. (Capability unit IIIw-11; woodland group C-2)

Grangeburg Series

Soils in the Grangeburg series are deep and moderately well drained. They developed in medium-textured marine deposits. They occur on uplands, mainly as broad flats along gently flowing streams. They are scattered throughout the county but are most common in the southeastern part. The slope range is 0 to 5 percent.

In this county Grangeburg soils are associated with Dothan, Ardilla, Dunbar, and Ocilla soils. They are less well drained and more mottled than Dothan soils but are better drained and less grayish than Ardilla soils. They are better drained than Dunbar soils and have a less fine textured subsoil. They are finer textured throughout than Ocilla soils.

Representative profile of Grangeburg fine sandy loam, 0 to 2 percent slopes, in a cornfield, SE¼NE¼NE¼SW¼ sec. 24, T. 1 N., R. 26 E., along an unpaved road, one-eighth of a mile north of school at Madrid:

Ap—0 to 5 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; many fine wormholes and root channels; strongly acid; clear, smooth boundary.

A2—5 to 9 inches, brown (10YR 4/3) fine sandy loam; weak, fine, granular structure; very friable; many fine roots of grass and weeds; few fine root channels and wormholes; strongly acid; clear, smooth boundary.

B1t—9 to 24 inches; yellowish-brown (10YR 5/6) sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet; sand grains coated and bridged with clay; few fine grass roots; few fine root channels and wormholes; strongly acid; gradual, smooth boundary.

B21t—24 to 35 inches, yellowish-brown (10YR 5/6) sandy clay loam with common, medium, distinct, light-gray (10YR 6/1) mottles and common, medium, faint, strong-brown (7.5YR 5/6) mottles; weak to moderate, medium, subangular blocky structure; friable; many patchy clay films on vertical and horizontal faces of peds; many small and medium pores; strongly acid; gradual, smooth boundary.

B22t—35 to 42 inches, brownish-yellow (10YR 6/8) sandy clay loam with many, coarse, prominent, light-gray (10YR 7/2) and strong-brown (7.5YR 5/6) mottles; weak to moderate, medium, subangular blocky structure; firm; many patchy clay films on vertical and horizontal faces of peds; common fine and medium pores; strongly acid; gradual, smooth boundary.

B23t—42 to 60 inches, reticulately mottled light-gray (10YR 7/2), brownish-yellow (10YR 6/8), and yellowish-red (5YR 5/6) sandy clay loam (soft plinthite); weak to moderate, medium, subangular blocky structure; very firm when moist, hard when dry; few fine and medium pores; common patchy clay films on horizontal and vertical faces of peds; strongly acid.

The A horizon ranges from gray to very dark grayish brown in color, from sandy loam to fine sandy loam in texture, and from 6 to 18 inches in thickness. The B1t horizon is olive-yellow (2.5Y 6/6) to yellowish-brown (10YR 5/8) sandy loam. The B2t horizon is pale-yellow (2.5Y 7/4) to yellowish-brown (10YR 5/6) heavy sandy loam to sandy clay loam. In some places a very weak, incipient fragipan occurs at a depth of 24 to 34 inches. Gray mottles begin 10 to 20 inches below the lower boundary of the A horizon. Small iron concretions make up 2 to 15 percent of the A and B horizons of some profiles. The horizon containing plinthite begins at a depth ranging from 32 to 50 inches. The plinthite consists of firm heavy sandy loam to sandy clay loam highly mottled with gray, brown, yellow, and red.

Grangeburg fine sandy loam, 0 to 2 percent slopes (GfA).—The surface layer of this soil is gray to very dark grayish-brown fine sandy loam 7 to 15 inches thick. The upper part of the subsoil is olive-yellow to yellowish-brown sandy loam, and the lower part is pale-yellow to yellowish-brown sandy loam to heavy sandy clay loam mottled with gray and pale brown. The underlying ma-

terial begins at a depth of 32 to 45 inches. It consists of highly mottled sandy loam to sandy clay and contains plinthite. In some areas small iron concretions make up 2 to 15 percent of the soil mass.

Included in the areas mapped are areas where the surface layer is 10 to 20 inches of loamy sand and areas where the lower part of the subsoil is clay loam and sandy clay. Also included are small spots of Dunbar, Dothan, Ardilla, and Ocilla soils.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through this soil at a moderate rate. Surface runoff is very slow, and the erosion hazard is slight or nonexistent. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for corn, vegetables, pasture, and pine trees. Yields are lower in wet years than in years of normal rainfall. Free water is within 20 inches of the surface most of the winter. Wetness is the major limitation if row crops are grown. (Capability unit IIw-17; woodland group C-3)

Grangeburg fine sandy loam, 2 to 5 percent slopes (GfB).—The surface layer of this soil is gray to dark grayish-brown fine sandy loam 6 to 12 inches thick. The upper part of the subsoil is olive-yellow to yellowish-brown sandy loam, and the lower part is pale-yellow to yellowish-brown sandy loam to heavy sandy clay loam mottled with pale brown and gray. The underlying material, which consists of highly mottled sandy loam to sandy clay loam containing plinthite, is at a depth of 32 to 45 inches.

Included in the areas mapped are areas where the surface layer is 10 to 20 inches of loamy sand and small, eroded spots where the surface layer is less than 6 inches thick. Also included are small areas of Dunbar, Dothan, and Ardilla soils.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through this soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight or moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for corn, vegetables, pasture, and pine trees. The water table is within 25 to 30 inches of the surface most of the winter. The erosion hazard is the major limitation. (Capability unit IIe-16; woodland group C-3)

Greenville Series

Soils in the Greenville series are deep and well drained. They developed in marine deposits and occur on broad flats, on ridgetops, and on side slopes. The slope range is 0 to 8 percent. The native vegetation is predominantly longleaf pine but includes a few scattered oaks and hickories.

In this county Greenville soils are associated with Red Bay and Orangeburg soils. They are similar to Red Bay soils in color and horizonation but are finer textured than those soils. They are redder and finer textured than Orangeburg soils.

Representative profile of Greenville fine sandy loam, 0 to 2 percent slopes, in a cottonfield, SW¼NE¼NE¼NE¼NW¼NW¼ sec. 20, T. 3 N., R. 26 E., 2 miles west of Ross Clark traffic circle and three-fourths of a mile south of U.S. Highway 84:

Ap—0 to 7 inches, dark reddish-brown (2.5YR 3/4) fine sandy loam; weak, fine, granular structure; very friable; many fine roots; medium acid; abrupt, smooth boundary.

B21t—7 to 13 inches, dark-red (10R 3/6) heavy sandy clay loam; very weak, medium, subangular blocky structure; friable when moist, slightly hard when dry, slightly sticky when wet; few thin discontinuous clay films on vertical faces of peds; plentiful fine roots; many medium-sized pores and root channels; many coarse, angular sand grains; about 2 percent of this horizon consists of small, hard iron concretions; medium acid; diffuse, smooth boundary.

B22t—13 to 40 inches, dark-red (10R 3/6) heavy clay loam; weak, medium, subangular blocky structure; friable when moist, hard when dry, sticky and slightly plastic when wet; many patchy clay films on vertical faces of peds; plentiful fine roots; many fine root channels and medium-sized pores; many coarse, angular sand grains; about 2 percent of this horizon consists of small, hard iron concretions; medium acid; diffuse, smooth boundary.

B23t—40 to 65 inches, dark-red (10R 3/6) sandy clay loam; very weak, medium, subangular blocky structure; friable when moist, slightly hard when dry, slightly sticky when wet; few patchy clay skins on faces of peds; common medium-sized pores; many coarse, angular sand grains and very small quartz fragments; medium acid.

The A horizon is dark reddish brown in most places but ranges from dark brown (7.5YR 3/2) to dark reddish brown (2.5YR 3/4). The B22t horizon ranges from red (2.5YR 4/8) to dark red (10R 3/6) in color and from sandy clay loam to sandy clay in texture. The B3 horizon, where present, ranges from red to dark red in color and from sandy loam to clay in texture. The depth to the B3 horizon is more than 40 inches. In a few places these soils are underlain by firm, compact sandy clay loam or sandy clay mottled with yellowish brown and white at a depth of more than 40 inches. In places the mottled underlying material contains iron ore and fragments of siliceous limestone.

Greenville fine sandy loam, 0 to 2 percent slopes (GrA).—The surface layer of this soil is dark-brown to dark reddish-brown fine sandy loam 7 to 10 inches thick. The upper part of the subsoil is red to dark-red, friable sandy clay loam to clay loam, and the lower part is red to dark-red clay loam to sandy clay. Material similar to that of the subsoil extends to a depth of several feet. Included in the areas mapped are a small acreage where the surface layer is loam, a few spots where the surface layer is more than 12 inches thick, and about 200 acres where hard, brown iron concretions make up as much as 40 percent of the soil mass.

This soil is low in fertility and low to moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting. In areas

that have been used for row crops year after year, a traffic pan has developed at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

This soil is used for all kinds of crops commonly grown in the county. It has no serious limitations. (Capability unit I–11; woodland group C–3)

Greenville fine sandy loam, 2 to 5 percent slopes, eroded (GrB2).—The surface layer of this soil is dark-brown to dark reddish-brown, friable fine sandy loam 2 to 6 inches thick. The upper part of the subsoil is red to dark-red, friable sandy clay loam to clay loam, and the lower part is red to dark-red, friable to firm clay loam to sandy clay. Material similar to that of the subsoil extends to a depth of several feet. Shallow gullies are common, and there are a few deep ones in areas adjacent to Red Bay soils. Included in the areas mapped are a small acreage where the surface layer is loam and areas where the surface layer is more than 6 inches thick. Also included are a small acreage that is severely eroded and small areas of Red Bay and Orangeburg soils.

This soil is low in fertility and low to moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content. Some clodding and crusting can be expected if the soil is plowed when wet, but the clods are weak and easily broken. In areas that have been used several years for row crops, a traffic pan has developed at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

Most of this soil is used for row crops or pasture. Loblolly and slash pine have been planted in some areas. The erosion hazard is the major limitation. (Capability unit IIe–11; woodland group C–3)

Greenville fine sandy loam, 5 to 8 percent slopes, eroded (GrC2).—The surface layer of this soil is dark-brown to dark reddish-brown, friable fine sandy loam 2 to 6 inches thick. The upper part of the subsoil is red to dark-red, friable sandy clay loam to clay loam, and the lower part is firm, red to dark-red clay loam to clay. Material similar to that of the subsoil extends to a depth of several feet and is underlain by coarser textured material. Shallow gullies are common, and there are a few deep ones in areas adjacent to Red Bay soils. Included in the areas mapped are areas where the surface layer is more than 6 inches thick, some severely eroded spots where the surface layer is red fine sandy clay loam, areas where the slope is as much as 12 percent, and a small acreage of Red Bay and Orangeburg soils.

This soil is low in fertility and low to moderately high in available water capacity. Water enters and moves through this soil at a moderate rate. Surface runoff is rapid, and the erosion hazard is severe. Tilth is good if the soil is worked when neither too wet nor too dry. A few clods form if the soil is plowed when wet, but they are weak and easily broken.

This soil occupies a small acreage in this county. About 58 percent is cropland, 27 percent is pasture, and 15 percent is woodland. The erosion hazard is the major limitation. (Capability unit IIIe–11; woodland group C–3)

Gullied Land

Gullied land (Gu) occurs in small areas throughout the county, generally in places where the slope is stronger than 5 percent. The gullies are mainly of two kinds: deep, caving-type gullies in areas adjacent to deep soils, and shallower gullies, mostly in areas adjacent to shallower soils. The soil material between gullies is that of surrounding soils.

The deep, caving-type gullies are mainly in the northwestern, or Panhandle, part of the county. They occur in or adjacent to such soils as those of the Red Bay, Orangeburg, and Greenville series. They are as much as 50 feet deep, and many shallow gullies lead into them.

The shallower gullies occur mainly in or adjacent to such soils as those of the Esto, Cowarts, Carnegie, and Sunsweet series. They are generally less than 10 feet deep. In many places they consist of areas where erosion has removed all of the surface soil and most of the subsoil and has exposed mottled, compact sandy clay loam to clay, similar to the material underlying the adjacent soils.

Surface runoff is rapid, and the erosion hazard is severe. These areas are not suitable for row crops, but they can be used for woodland. (Capability unit VIIe–19; woodland group C–8)

Iuka Series

Soils in the Iuka series are deep and moderately well drained. The upper 20 to 40 inches consists of loamy to sandy deposits of fresh-water sediments over a buried soil that has a profile similar to that of the adjoining soil. The deposits are thickest near the banks of streams and in the center of depressions. They thin out towards the adjacent uplands. These soils occur as small, rounded and oblong depressions and as narrow strips along intermittent streams throughout the county. The slope range is 0 to 2 percent. The native vegetation consists of longleaf, loblolly, and slash pine, gum, oak, gallberry, waxmyrtle, and wiregrass.

In this county Iuka soils are associated mainly with Dothan, Varina, Orangeburg, Greenville, Alaga, and Wagram soils. They differ from those soils in having 20 to 40 inches of recently deposited alluvium overlying a buried soil.

Representative profile of Iuka soils, local alluvium, in a pasture of bahiagrass, NW¼SW¼NW¼NE¼ sec. 22, T. 3 N., R. 27 E., 2 miles west of Cowarts:

Ap—0 to 7 inches, stratified dark-brown (10YR 3/3) sandy loam and light brownish-gray (10YR 6/2) loamy sand; weak, fine, granular structure; friable; many fine grass roots; strongly acid; abrupt, smooth boundary.

C1—7 to 30 inches, dark yellowish-brown (10YR 4/4) sandy loam mottled with dark grayish brown (10YR 4/2); structureless; friable; strongly acid; abrupt, smooth boundary.

Ab—30 to 34 inches, very dark gray (10YR 3/1) fine sandy loam; weak, fine, granular structure; friable; strongly acid; abrupt, smooth boundary.

B1b—34 to 44 inches, yellowish-brown (10YR 5/6) fine sandy loam; weak or very weak, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; strongly acid; gradual, smooth boundary.

B2tb—44 to 60 inches +, yellowish-brown (10YR 5/6) sandy clay loam with common, medium, faint, strong-

brown (7.5YR 5/8) mottles; weak to moderate, medium, subangular blocky structure; friable; sand grains coated and bridged with clay; few patchy clay films on faces of peds; strongly acid.

The Ap horizon ranges from loamy sand to the lower limit of silt loam in texture and from 6 to 12 inches in thickness. In uncultivated areas the A horizon consists of thinly stratified sand, loamy sand, sandy loam, and silt loam. The depth to the buried soil ranges from 20 to 40 inches.

Iuka soils, local alluvium (0 to 2 percent slopes) (Iu).—The surface layer of these soils is dark-gray to very dark grayish-brown loamy sand to silt loam. The subsurface layer consists of highly stratified, thin layers of sand, loamy sand, sandy loam, and silt loam and ranges from very dark grayish brown through yellowish brown in color. A buried soil that has a profile similar to that of adjacent soils is at a depth of 20 to 40 inches. Small spots of Mantachie soils, local alluvium, occur near the center of some areas.

These soils are moderately high in fertility and in available water capacity. Water enters and moves through the sediments at a rapid or moderate rate. Surface runoff is slow in areas along intermittent streams and very slow or ponded in depressions. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

These soils are used for all kinds of crops grown in the county. In some areas sedimentation is a problem because the soils receive runoff from adjacent soils. After rainfall, water stands on the surface for a period of a few hours to several days, and in wet years ponded water damages young plants. When the soil is wet, some of the areas will not support farm machinery. Wetness is the major limitation. (Capability unit IIw-11; woodland group C-6)

Lucy Series

Soils in the Lucy series are deep and well drained and have a thick, sandy surface layer. They developed in thick beds of alluvial deposits. They occur on flats and broad ridgetops and on side slopes. The slope range is 0 to 17 percent. The native vegetation consists of longleaf and loblolly pine and scattered dogwood and scrub oak.

In this county Lucy soils are associated with Wagram, Alaga, Troup, Dothan, and Orangeburg soils. They are more reddish in their subsoil than Wagram soils. They are finer textured in the lower part of their subsoil than Alaga and Troup soils. They differ from Dothan and Orangeburg soils in that the surface layer is loamy sand or loamy fine sand to a depth of 20 to 30 inches. Also, the upper part of the subsoil is less clayey than that of Dothan and Orangeburg soils.

Representative profile of Lucy loamy sand, 0 to 2 percent slopes, in a cultivated area, SE¼SE¼SE¼ sec. 16, T. 1 N., R. 28 E., 0.2 mile west of Hickory Grove Baptist Church:

Ap—0 to 8 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; strongly acid; abrupt, smooth boundary.

A2—8 to 24 inches, strong-brown (7.5YR 5/6) loamy sand; weak, fine, granular structure; very friable; strongly acid; gradual, smooth boundary.

B1—24 to 35 inches, yellowish-red (5YR 4/8) sandy loam; weak, medium, subangular blocky structure; very friable; sand grains coated and bridged with clay; strongly acid; diffuse, smooth boundary.

B2t—35 to 76 inches, red (2.5YR 4/8) sandy clay loam; weak to moderate, medium, subangular blocky structure; friable when moist; few thin, discontinuous clay films on vertical and horizontal surfaces of peds; clay content gradually decreases below a depth of 60 inches; strongly acid.

The Ap horizon ranges from brown (7.5YR 5/2) to very dark grayish brown (10YR 3/2) in color and from loamy sand to loamy fine sand in texture. The A2 horizon ranges from strong brown (7.5YR 5/8) to yellowish red (5YR 4/8) in color and from loamy sand to loamy fine sand in texture. The B horizons range from yellowish red (5YR 5/6) to red (2.5YR 4/8) in color and from sandy loam to sandy clay loam in texture. The depth to the B horizon ranges from 20 to 40 inches. In places incipient plinthitic horizons begin at a depth of more than 60 inches.

Lucy loamy sand, 0 to 2 percent slopes (LuA).—The surface layer of this soil consists of 20 to 30 inches of loamy sand. The upper part is grayish-brown to dark grayish-brown, very friable loamy sand 7 to 12 inches thick. The lower part is strong-brown to yellowish-red, very friable loamy fine sand 6 to 23 inches thick. The upper part of the subsoil is yellowish-red to red, friable sandy loam, and the lower part is friable or firm sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet. Included in the areas mapped are small areas of Troup, Alaga, Dothan, and Orangeburg soils.

This soil is low in fertility and in available water capacity. It is strongly acid. Water enters and moves through it rapidly. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for all kinds of crops grown in the county. It is an excellent soil for peanuts. Droughtiness is the only serious limitation. (Capability unit IIs-12; woodland group C-3)

Lucy loamy sand, 2 to 5 percent slopes (LuB).—The surface layer of this soil consists of 20 to 30 inches of loamy sand. The upper part is grayish-brown to dark grayish-brown, very friable loamy fine sand 5 to 9 inches thick. The lower part is strong-brown to yellowish-red, very friable loamy fine sand 9 to 25 inches thick. The upper part of the subsoil is yellowish-red to red, friable sandy loam, and the lower part is yellowish-red to red, friable or firm sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet. Included in the areas mapped are small areas of Troup, Alaga, Dothan, and Orangeburg soils.

This soil is low in fertility and in available water capacity. It is strongly acid. Water enters and moves through it at a rapid rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for all kinds of crops grown in the county. It is an excellent soil for peanuts. Droughtiness and the erosion hazard are the major limitations. (Capability unit IIs-12; woodland group C-3)

Lucy loamy sand, 5 to 8 percent slopes (LuC).—The surface layer of this soil consists of 20 to 30 inches of friable loamy sand. The upper part is grayish-brown to brown, and the lower part is strong brown to yellowish red. The upper part of the subsoil is strong-brown to yellowish-red, friable sandy loam, and the lower part is yellowish-red to red sandy loam or sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet in most places.

This soil is low in fertility and in available water capacity. It is strongly acid. Water enters and moves through the soil rapidly. Surface runoff is medium, and the erosion hazard is moderate. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

Rills and shallow gullies are numerous in some areas, and there are deep gullies in places. The slope and the uneven surface limit the use of four-row equipment. (Capability unit IIIs-17; woodland group C-3)

Lucy loamy sand, 8 to 17 percent slopes (LuE).—The surface layer of this soil consists of 20 to 30 inches of loamy sand. The upper part is brown to dark grayish brown, and the lower part is strong brown to yellowish red. The upper part of the subsoil is yellowish-red to red, friable sandy loam, and the lower part is yellowish-red to red sandy loam to sandy clay loam. Rills and shallow gullies are common, and there are a few deep gullies. Included in the areas mapped are small areas of Troup, Orangeburg, Wagram, and Americus soils.

This soil is low in fertility and in available water capacity. It is strongly acid. Water enters and moves through the soil at a moderate rate. Surface runoff is medium or rapid, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

This soil is used mainly for pasture and woodland, but a small acreage is used for row crops. The many rills and gullies and the strong slope limit the use of farm machinery. The erosion hazard, droughtiness, and susceptibility to leaching are the major limitations. (Capability unit VIs-11; woodland group C-1)

Mantachie Series

Soils in the Mantachie series are deep and somewhat poorly drained. They formed in alluvium washed from uplands. They occur as flood plains along rivers and large creeks and as small, rounded depressions and narrow strips along intermittent drainageways. The surface has been roughened by the scouring of floodwaters, and there are many humps and holes. Mantachie soils along the Chattahoochee River contain mica flakes because they have been influenced by soil material washed from the adjacent Piedmont province. The native vegetation consists mainly of gum, poplar, ash, oak, hickory, and hackberry.

In this county Mantachie soils are associated with Ochlockonee and Buncombe soils. They are more poorly drained and more gleyed than Ochlockonee soils, and they are grayer and less brownish than those soils. They are more poorly drained, grayer, and finer textured than Buncombe soils.

Representative profile of Mantachie silt loam (0 to 2 percent slopes), on the flood plain of the Chattahoochee River in a wooded area, NE$\frac{1}{4}$ sec. 15, T. 1 N., R. 30 E.:

A1—0 to 6 inches, dark grayish-brown (10YR 4/2) silt loam; weak, fine, granular structure; friable when moist, slightly sticky when wet; many fine mica flakes; many fine and few medium roots; strongly acid; gradual, smooth boundary.

A2—6 to 11 inches, dark-brown (7.5YR 4/4) silt loam; weak, medium, granular structure; friable when moist, plastic and sticky when wet; few fine mica flakes; strongly acid; clear, wavy boundary.

C1g—11 to 26 inches, grayish-brown (10YR 5/2) silt loam; common, medium, faint, gray (10YR 6/1) mottles and few, fine, distinct, yellowish-red (5YR 4/8) mottles; structureless (massive); friable when moist, slightly sticky when wet; few fine and medium roots; few fine mica flakes; small pockets and thin, discontinuous layers of sand; strongly acid; clear, wavy boundary.

IIC2g—26 to 34 inches, gray (7.5YR N 5/0) loam; common, fine, distinct, reddish-brown (5YR 4/3) mottles and common, fine, distinct, strong-brown (7.5YR 5/6) mottles; structureless (massive); friable; few coarse tree roots; strongly acid; gradual, wavy boundary.

IIIC3g—34 to 48 inches, light-gray (10YR 6/1) sandy loam; common, fine, distinct, strong-brown (7.5YR 5/6) mottles and common, fine, distinct, reddish-brown (5YR 4/3) mottles; structureless (massive); friable; strongly acid.

The A horizon ranges from dark grayish brown to very dark gray in color, from loamy sand to silt loam in texture, and from 4 to 15 inches in thickness. The depth to gray mottles ranges from 6 to 18 inches. In most places the C horizon consists of thinly stratified loamy sand, sandy loam, loam, and silt loam, but the texture of this horizon varies, as does the color. In places there is a buried soil at a depth of 20 to 40 inches.

Mantachie soils (0 to 2 percent slopes) (Ma).—The surface layer of these soils is very dark gray to gray sandy loam to silt loam 10 to 15 inches thick. Gray mottles begin at a depth of 6 to 18 inches. The underlying material consists of stratified sandy loam, loam, and silt loam. Included in the areas mapped are small, better drained areas and some areas that are more poorly drained. Also included are small spots that have up to 10 inches of white sand on the surface.

These soils are moderate in fertility and moderately high in available water capacity. Surface runoff is slow, and the erosion hazard is slight.

Most of the acreage is wooded. Free water is within a few inches of the surface in winter. It is within 20 inches of the surface at all times, except in extremely dry years. Mantachie soils along large creeks are subject to frequent flooding. Areas along the Chattahoochee River are ponded most of winter and during periods of heavy rainfall in summer. (Capability unit IVw-11; woodland group C-7)

Mantachie soils, local alluvium (Mn).—The surface layer of these soils is gray to very dark gray loamy sand to silt loam. The underlying material is gray to yellowish-brown, stratified sand, loamy sand, sandy loam, and silt loam. In depressions, the alluvial material is generally thickest near the center. A profile similar to that of adjacent soils is buried at a depth of 20 to 40 inches.

These soils are moderately high in fertility and in available water capacity. Water enters and moves through the sediments at a rapid to moderate rate. Tilth is good, but the soils are usually not dry enough to support farm machinery at the time adjoining soils are prepared for planting.

Many of the areas have been cleared, but they are usually left idle because they are wet and are too small to be managed separately from adjoining soils. They receive much surface runoff from adjacent soils, and in some areas sedimentation is a problem. Water stands on the surface most of the winter and for several days after rainfall in summer. Crops are sometimes damaged or completely lost because of ponded water. Yields from pasture and from late summer and fall crops are usually high. (Capability unit IIIw-11; woodland group C-7)

Maxton Series

Soils in the Maxton series are deep and well drained. They developed in old loamy alluvium. They occur on stream terraces where the slope range is 0 to 5 percent, mainly along the Chattahoochee River, but also in a few small areas along the Choctawhatchee River. They are subject to flooding. Maxton soils in the eastern part of the county contain many flakes of mica because they have been influenced by soil material washed from the adjacent Piedmont province. The native vegetation consists mainly of longleaf, loblolly, and slash pine but includes some oak, hickory, gum, dogwood, and other hardwoods.

In this county Maxton soils are associated with Alaga, Flint, and Wickham soils. They are finer textured and redder than Alaga soils and are coarser textured, more friable, less mottled, and better drained than Flint soils. They are coarser textured, more friable, and less well developed than Wickham soils.

Representative profile of Maxton fine sandy loam, 0 to 2 percent slopes, in a wooded area, SE¼SW¼SW¼ sec. 26, T. 3 N., R. 29 E., one-fourth of a mile northeast of the junction of Jackson Creek and the Chattahoochee River:

Ap—0 to 7 inches, grayish-brown (10YR 5/2) fine sandy loam; very weak, fine, granular structure; very friable; many mica flakes; many fine grass roots; few pine roots; medium acid; gradual, smooth boundary.

A3—7 to 12 inches, yellowish-brown (10YR 5/6) sandy loam; very weak, fine, granular structure; very friable; plentiful grass roots; few coarse pine roots; many fine mica flakes; medium acid; gradual, smooth boundary.

B1—12 to 23 inches, yellowish-red (5YR 4/8) sandy loam; weak, medium, subangular blocky structure; very friable when moist, slightly sticky when wet; few patchy clay films on vertical faces of peds; sand grains coated and bridged; many small and medium pores; many mica flakes; few pine roots; strongly acid; diffuse, smooth boundary.

B2t—23 to 34 inches, red (2.5YR 4/6) sandy clay loam; weak to moderate, medium, subangular blocky structure; firm when moist, hard when dry, sticky and slightly plastic when wet; nearly continuous clay films on faces of peds; thick clay coatings on coarse quartz sand grains; many mica flakes; many small and medium pores; strongly acid; diffuse, smooth boundary.

B3—34 to 39 inches, yellowish-red (5YR 5/6) light sandy clay loam; common, medium, distinct, red (2.5YR 4/8) mottles and common, fine, faint, brownish-yellow (10YR 6/6) mottles; weak, medium, subangular blocky structure; firm when moist, slightly sticky when wet, slightly hard when dry; thin, patchy clay films on vertical faces of peds; much bridging of sand grains by clay particles; few small and medium pores; strongly acid; diffuse, smooth boundary.

IIC—39 to 46 inches, yellowish-red (5YR 5/6) sandy loam; many, fine, faint, reddish-yellow (5YR 7/6) mottles and few, coarse, prominent, light-gray (2.5Y 7/2) mottles; structureless (massive); firm when moist, hard when dry; many coarse sand grains; few mica flakes; common pockets of sand; strongly acid.

The A horizon ranges from brown (10YR 5/3) to very dark grayish brown (10YR 3/2) in color and from 6 to 17 inches in thickness. The B1 horizon ranges from yellowish brown (10YR 5/6) to yellowish red (5YR 4/8) in color and from 6 to 17 inches in thickness. The B2t horizon ranges from yellowish brown to red (2.5YR 4/8) in color, from sandy loam to sandy clay loam in texture, and from 10 to 22 inches in thickness. The underlying material, consisting of sand, loamy sand, or sandy loam, begins at a depth of 30 to 50 inches. A texture finer than loamy fine sand is uncommon at a depth of more than 50 inches. The material below the B horizon ranges from yellowish brown to red in color and in many areas is free of mottles.

Maxton fine sandy loam, 0 to 2 percent slopes (MxA).—The surface layer of this soil is brown to very dark grayish-brown fine sandy loam 7 to 15 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable sandy loam, and the lower part is yellowish-brown to red, friable or firm sandy clay loam. The underlying material, consisting of mottled, somewhat compact sandy loam or of beds of sand and gravel, begins at a depth of 40 to 50 inches. Included in the areas mapped are small areas where the subsoil is red sandy clay, some areas where the surface layer is loamy fine sand, and small spots of Iuka soils, local alluvium, in rounded or oblong depressions. Water ponds in these depressions for several hours after rainfall. Also included is about 130 acres where the subsoil is yellowish-brown sandy loam to sandy clay loam.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is well suited to all kinds of crops commonly grown in the county. There are no serious limitations, but in some years winter crops are damaged by flooding. (Capability unit I-12; woodland group C-3)

Maxton fine sandy loam, 2 to 5 percent slopes (MxB).—The surface layer of this soil is very friable, brown to dark grayish-brown fine sandy loam 6 to 17 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable sandy loam, and the lower part is yellowish-brown to red, friable or firm sandy clay loam. The underlying material consists of mottled, somewhat

compact sandy loam or stream-deposited layers of loamy sand or sand and gravel. It begins at a depth of 30 to 50 inches. Included in the areas mapped are small areas where the subsoil is red sandy clay and some spots where the surface layer is loamy sand. Also included are moderately eroded areas where the surface layer is less than 6 inches thick. In addition, a few small spots of Iuka soils, in rounded or oblong depressions, are included in the areas mapped. Water ponds in these depressions for several hours after rainfall.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow to medium, and the erosion hazard is slight or moderate. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is well suited to all kinds of crops commonly grown in the county. It is not suited to terracing, because it occurs on low, rounded knolls and short, irregular side slopes. The erosion hazard is the major limitation, but the soil is also subject to flooding during periods of heavy rainfall. (Capability unit IIe-12; woodland group C-3)

Ochlockonee Series

Soils in the Ochlockonee series are very dark brown to brown and well drained. They developed in stream-deposited alluvium washed from upland soils. They occur as long, narrow areas that parallel the banks of rivers and large creeks. There are old streambanks and channels in most of the areas, and in places the surface features are rough. The native vegetation consists mainly of gum, poplar, ash, oak, hickory, hackberry, and black walnut.

In this county Ochlockonee soils are associated with Mantachie and Buncombe soils. They are better drained, browner, and less grayish than Mantachie soils and are finer textured than Buncombe soils.

Representative profile of Ochlockonee fine sandy loam (0 to 2 percent slopes), on the flood plain of the Chattahoochee River, NW¼NW¼SE¼ sec. 15, T. 1 N., R. 30 E.:

Ap—0 to 7 inches, dark yellowish-brown (10YR 4/4) fine sandy loam; weak, fine, granular structure; very friable when moist, nearly loose when dry, nonsticky when wet; abundant grass roots; few medium tree roots; many fine mica flakes; strongly acid; gradual, smooth boundary.

C1—7 to 17 inches, very dark grayish-brown (10YR 3/2) silt loam; structureless; very friable when moist, nearly loose when dry, nonsticky when wet; few fine grass roots; few medium tree roots; many fine mica flakes; strongly acid; gradual, smooth boundary.

C2—17 to 28 inches, dark-brown (10YR 4/3) fine sandy loam; structureless; very friable; many fine mica flakes; few medium tree roots; few dark-brown organic stains; strongly acid; gradual, smooth boundary.

C3—28 to 50 inches, yellowish-brown (10YR 5/4) loamy fine sand; structureless; very friable when moist, slightly sticky when wet; few medium tree roots; strongly acid.

The A horizon ranges from very dark brown (10YR 2/2) to brown (7.5YR 5/2) in color and from 7 to 20 inches in thickness. Its texture is principally silt loam and sandy loam. In a few places, mottles of yellow, gray, and brown occur at a depth of 30 inches or more. The C horizon consists of highly stratified material of varying color and texture.

Ochlockonee soils (0 to 2 percent slopes) (Oc).—The surface layer of this soil consists of 7 to 20 inches of friable, dark brown to very dark brown fine sandy loam to silt loam. It is underlain by highly stratified material of varying color and texture. In a few places, mottles of yellow, gray, and brown begin at a depth of 30 to 40 inches. Included in the areas mapped are a few small areas where as much as 15 inches of recently deposited white sand is on the surface. Also included are small areas of Buncombe and Mantachie soils and a small acreage of a moderately well drained soil in which gray mottles begin at a depth of 18 to 30 inches. In addition, there are a few areas where the reaction is medium acid to slightly acid.

These soils are moderate in fertility and moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight.

Most of the acreage is wooded, but a few areas are used for row crops and pasture. In some of the areas, the topography is too rough to permit efficient use of farm machinery. During periods of heavy rainfall, this soil is subject to flooding and scouring. (Capability unit IIw-11; woodland group C-6)

Ocilla Series

Soils in the Ocilla series are deep and somewhat poorly drained and are sandy to a depth of 2 feet or more. They developed in coarse-textured marine deposits. They occur on uplands in the southern part of the county where the slope range is 0 to 5 percent. These soils occur as small, rounded depressions, as narrow strips along gently flowing streams, and as broad, low flats. The native vegetation consists mainly of longleaf, loblolly, and slash pine but includes gum, oak, gallberry, waxmyrtle, and wiregrass.

In this county Ocilla soils are associated with Alaga, Pelham, Dothan, and Grangeburg soils. They are similar to Alaga and Pelham soils in texture and horizonation. They are better drained than Pelham soils but less well drained than Alaga soils. They are sandier throughout the profile than Dothan and Grangeburg soils.

Representative profile of Ocilla loamy fine sand, 0 to 2 percent slopes, NW¼NE¼NE¼ sec. 25, T. 1 N., R. 27 E., in a wooded area, 1 mile southeast of Cottonwood:

A1—0 to 6 inches, very dark grayish-brown (2.5Y 3/2) loamy fine sand; very weak, fine, granular structure; very friable; many fine grass roots; common medium tree roots; strongly acid; gradual, smooth boundary.

A2—6 to 9 inches, dark grayish-brown (2.5Y 4/2) loamy fine sand; very weak, fine, granular structure; very friable; many fine grass roots; common medium tree roots; strongly acid; clear, smooth boundary.

A22—9 to 18 inches, brownish-yellow (10YR 6/6) loamy sand; structureless; very friable; few fine grass roots; few medium and coarse tree roots; very strongly acid; diffuse, smooth boundary.

A23g—18 to 32 inches, light yellowish-brown (2.5Y 6/4) loamy sand; common, medium, faint, light brownish-gray (2.5Y 6/2) mottles; structureless; very

friable; few medium tree roots; very strongly acid; diffuse, smooth boundary.

Btg—32 to 60 inches, light olive-brown (2.5Y 5/6) sandy loam; many, coarse, prominent, strong-brown (7.5YR 5/6) and light brownish-gray (2.5Y 6/2) mottles; weak, coarse, subangular blocky structure; nonsticky when wet, friable when moist, slightly hard when dry; sand grains coated and bridged with clay; very strongly acid.

The A horizon ranges from grayish brown (2.5Y 5/2) to very dark gray (N 3/0) in color. Gray mottles begin at a depth ranging from 14 to 25 inches. The depth to the Btg horizon, consisting of mottled gray, strong-brown, and yellowish-brown sandy loam or sandy clay loam ranges from 24 to 40 inches.

Ocilla loamy fine sand, 0 to 2 percent slopes (OfA).—The surface layer of this soil is grayish-brown to very dark gray loamy fine sand 7 to 12 inches thick. The subsoil is light yellowish-brown to brownish-yellow loamy sand mottled with gray and strong brown in the lower part. The subsoil is underlain by mottled gray, strong-brown, and yellowish-brown sandy loam and sandy clay loam beginning at a depth of 24 to 40 inches. Included in the areas mapped is a very small acreage where the surface layer is black and more than 12 inches thick, a few areas where the texture is light sandy loam at a depth of less than 20 inches, and small spots of Pelham, Alaga, Wagram, and Grangeburg soils.

This soil is low in fertility and seasonally low in available water capacity. Water enters and moves through the soil rapidly, but the fine-textured underlying material slows the downward movement of water. Surface runoff is very slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for corn, vegetable crops, woodland, and pasture. Free water is at a depth of only 15 to 20 inches most of winter, and consequently, preparation of the soil for spring planting must be delayed. Wetness is the major limitation. (Capability unit IIIw–14; woodland group C–10)

Ocilla loamy fine sand, 2 to 5 percent slopes (OfB).—The surface layer of this soil is grayish-brown to dark-gray loamy fine sand. The subsoil is yellow to yellowish-brown loamy sand mottled with gray at a depth of 14 to 25 inches. The underlying material, consisting of mottled gray, brown, and yellow sandy loam and sandy clay loam, begins at a depth of 24 to 40 inches. Included in the areas mapped are small areas of Grangeburg, Alaga, Wagram, and Dothan soils. Also included is a small acreage where the fine-textured underlying material begins at a depth of less than 20 inches.

This soil is very low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for corn, pasture, vegetables, and woodland. Free water is at a depth of 20 to 30 inches most of winter. Crops are damaged in most years by lack of moisture because of the very low available water capacity. (Capability unit IIIs–11; woodland group C–10)

Orangeburg Series

Soils in the Orangeburg series are deep, well drained, and acid. They developed in thick beds of unconsolidated marine deposits. They occur on upland flats and broad ridgetops and on gentle side slopes. The slope range is 0 to 8 percent. The native vegetation consists mainly of longleaf and loblolly pine but includes oak, hickory, and dogwood, and a ground cover of wiregrass.

In this county Orangeburg soils occur with Dothan, Red Bay, Greenville, and Faceville soils. They are redder throughout than Dothan soils, but their surface layer is less reddish than that of Red Bay soils. Their subsoil is sandier and less reddish than that of Greenville soils. They are coarser textured than Faceville soils.

Representative profile of Orangeburg sandy loam, 2 to 5 percent slopes, eroded, in a peanut field, SE¼NW¼ SE¼NW¼ sec. 28, T. 3 N., R. 24 E.:

Ap—0 to 8 inches, dark yellowish-brown (10YR 4/4) sandy loam; weak, fine, granular structure; very friable; medium acid; abrupt, smooth boundary.

B1t—8 to 13 inches, yellowish-red (5YR 5/6) sandy loam; very weak, medium, subangular blocky structure; very friable; some clay coatings on sand grains; many small and medium pores and root channels; strongly acid; gradual, smooth boundary.

B21t—13 to 19 inches, red (2.5YR 5/8) heavy sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; few patchy clay skins on vertical faces of peds; many small and medium pores; few small root channels; strongly acid; diffuse, smooth boundary.

B22t—19 to 60 inches, red (2.5YR 4/8) heavy sandy clay loam; moderate, medium, subangular blocky structure; friable when moist, sticky and slightly plastic when wet, hard when dry; many thin clay skins on vertical faces of peds; few patchy films on horizontal faces; many fine and medium pores; strongly acid.

The A horizon ranges from gray (5YR 5/1) to dark grayish brown (10YR 4/2) in color, except in eroded areas where the color ranges to yellowish brown. The B1t horizon ranges from strong brown (7.5YR 5/8) to yellowish red (5YR 4/8) or red, and the B2t horizon ranges from red (2.5YR 4/8) to dark red (10R 3/6). The texture of the B2t horizon ranges from heavy sandy loam to heavy sandy clay loam.

Orangeburg sandy loam, 0 to 2 percent slopes (OrA).—The surface layer of this soil is grayish-brown to dark grayish-brown sandy loam 7 to 12 inches thick. The upper part of the subsoil is strong-brown to yellowish-red, friable sandy loam, and the lower part is yellowish-red to red, friable or firm sandy loam to sandy clay loam. The underlying material, beginning at a depth of more than 60 inches in most places, consists of mottled red, yellow, strong-brown, and yellowish-red, firm or very firm sandy loam to sandy clay loam. In some places the underlying material is strong-brown to red loamy sand to light sandy clay loam. Included in the areas mapped are small areas of Dothan, Troup, Faceville, and Lucy soils. Also included is a small acreage where the surface layer is loamy sand.

This soil is low in fertility and in available water capacity. Water enters and moves through the profile at a moderate rate. Surface runoff is very slow, and the erosion hazard is slight or nonexistent. Tilth is good,

and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is well suited to all kinds of crops grown in the county. It has no serious limitations. (Capability unit I–12; woodland group C–3)

Orangeburg sandy loam, 2 to 5 percent slopes, eroded (OrB2).—The surface layer of this soil is gray to yellowish-brown sandy loam 3 to 6 inches thick. The upper part of the subsoil is strong-brown to yellowish-red sandy loam, and the lower part is red to dark-red heavy sandy loam to sandy clay loam. Material similar to that of the lower part of the subsoil extends to a depth of several feet in most places. Some areas are underlain by compacted, firm, red sandy loam to sandy clay loam, mottled with yellowish brown at a depth of more than 36 inches. Included in the areas mapped are small areas of eroded Dothan, Troup, Greenville, and Red Bay soils. Also included are areas that are less eroded and that have a surface layer more than 6 inches thick.

This soil is low in fertility and in available water capacity. Water enters and moves through the profile at a moderate rate. Surface runoff is slow or medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content. A few clods form if the soil is plowed when wet, but they are usually weak and easily broken. Areas that have been used several years for cultivated crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water.

This soil is used for all kinds of crops grown in the county. The erosion hazard is the major limitation. (Capability unit IIe–12; woodland group C–3)

Orangeburg sandy loam, 5 to 8 percent slopes, eroded (OrC2).—The surface layer of this soil is yellowish-brown to dark grayish-brown sandy loam 3 to 6 inches thick. The upper part of the subsoil is strong-brown to red, friable sandy loam, and the lower part is yellowish-red to red, friable to firm sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet and becomes more sandy as depth increases. Shallow gullies are common, and there are a few deep gullies. Included in the areas mapped are areas of eroded Faceville and Tifton soils. Also included are some less eroded areas where the surface layer is loamy sand and some severely eroded spots where the surface layer is yellowish brown to reddish brown.

This soil is low in fertility and in available water capacity. Water enters and moves through the profile at a moderate rate. Surface runoff is medium or rapid, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content. A few clods form if the soil is plowed when wet, but they are usually weak and easily broken. Areas that have been used several years for cultivated crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water.

This soil is used for all kinds of crops grown in the county. The slope and the erosion hazard are the major limitations. (Capability unit IIIe–12; woodland group C–3)

Pansey Series

Soils in the Pansey series are poorly drained and strongly acid. They developed in medium-textured marine deposits. They occur on uplands, mainly on broad flats and along gently flowing streams in the southern part of the county. The slope range is 0 to 2 percent. The native vegetation consists mainly of pine, gum, and mixed hardwoods but includes scattered cypress, gallberry, waxmyrtle, and wiregrass.

In this county Pansey soils are associated with Grangeburg, Ardilla, and Plummer soils. They are more poorly drained than Grangeburg and Ardilla soils, and their subsoil is more gleyed than that of those soils. They are finer textured than Plummer soils.

Representative profile of Pansey fine sandy loam (0 to 2 percent slopes), in a wooded area, SW¼NE¼NE¼NW¼ sec. 7, T. 1 N., R. 28 E., 200 yards south of unpaved road, half a mile east of the Cottonwood-Ashford Road and 2½ miles north of Cottonwood:

A1—0 to 5 inches, very dark gray (N 3/0) fine sandy loam; weak, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

A2—5 to 10 inches, gray (10YR 5/1) fine sandy loam; weak, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

B1tg—10 to 20 inches, light-gray (10YR 6/1) sandy loam; few, fine, distinct, olive-yellow (2.5Y 6/8) mottles; weak, medium, subangular blocky structure; very friable; sand grains coated and bridged with clay; strongly acid; gradual, smooth boundary.

B21tg—20 to 35 inches, light-gray (N 7/0) sandy clay loam; many, medium, distinct, olive-yellow (2.5Y 6/6) mottles and few, medium, prominent, red (2.5YR 4/8) mottles; weak to moderate, medium, subangular blocky structure; friable; few patchy clay films on vertical and horizontal faces of peds; strongly acid; gradual, smooth boundary.

Bx—35 to 60 inches +, reticulately mottled light-gray (N 7/0), red (2.5YR 4/8), and yellowish-brown (10YR 5/6) sandy clay loam; soft plinthite; moderate, medium, subangular blocky structure; firm when moist, hard when dry; common clay films on vertical and horizontal faces of peds; strongly acid.

The A horizon ranges from gray (N 5/0) to black (2.5Y N 2/0) in color and from 7 to 12 inches in thickness. The B21tg horizon ranges from sandy loam to heavy sandy clay loam in texture. The depth to the highly mottled fragipan containing plinthite ranges from 28 to 40 inches.

Pansey fine sandy loam (Pa).—The surface layer of this soil is gray to black fine sandy loam 7 to 12 inches thick. The upper part of the subsoil is gray sandy loam, and the lower part is gray sandy clay loam mottled with yellowish red and yellowish brown. The underlying material, beginning at a depth of 28 to 40 inches, consists of highly mottled sandy loam to sandy clay. Included in the areas mapped are small areas of Plummer and Ardilla soils. Also included are areas where the surface layer is loamy sand, areas where the surface layer is loam, and areas where the subsoil is sandy clay.

This soil is low in fertility and moderately high in available water capacity. Water enters the soil at a moderate rate but moves through the subsoil slowly because of a high water table. Surface runoff is very slow, and the erosion hazard is slight. Tilth is fair,

but if worked when too wet or too dry the soil clods and crusts, and it does not afford traction and support for farm machinery.

Most of the acreage is used for woodland or pasture, but a small part is used for corn. The water table is at a depth of only 12 to 30 inches most of the year, and water stands on the surface in winter. The planting of row crops must be delayed until late in spring because the soil is too wet for early preparation. Wetness is the major limitation. (Capability unit IVw–11; woodland group C–2)

Pelham Series

Soils in the Pelham series are poorly drained and have a thick, sandy surface layer. They developed in thick beds of marine-deposited sand and loamy sand. They occur as large depressions on uplands in the southeastern corner of the county. The slopes are concave and range from 0 to 2 percent. The native vegetation consists mainly of live oak, longleaf and slash pine, and May hawthorn.

In this county Pelham soils are associated with Plummer, Pansey, Grangeburg, Dothan, and Alaga soils. They are better drained than Plummer soils. They are coarser textured than Pansey, Grangeburg, and Dothan soils. Their subsoil is lighter colored than that of Plummer, Pansey, Grangeburg, and Alaga soils.

Representative profile of Pelham sand (0 to 2 percent slopes), in a wooded area, SE¼SW¼NE¼NW¼SE¼SE¼ sec. 14, T. 7 N., R. 10 W., half a mile north of the Florida State Line:

A1—0 to 8 inches, gray (N 5/0) sand; single grain; very friable or loose; many small and medium tree roots; medium acid; clear, smooth boundary.

A2g—8 to 40 inches, light-gray (5Y 7/1) sand; single grain; very friable or loose; few medium tree roots; strongly acid; gradual, smooth boundary.

B1g—40 to 47 inches, light-gray (5Y 7/1) sandy loam; common, medium, distinct, yellow (2.5Y 7/6) mottles; very weak, medium, subangular blocky structure; friable; compact in place; few medium tree roots; very strongly acid; gradual, smooth boundary.

B2tg—47 to 52 inches +, light-gray (5Y 7/1) sandy clay loam; common, coarse, prominent, yellow (2.5Y 7/6) mottles; very weak, medium, subangular blocky structure; firm when moist, plastic when wet, hard when dry; plentiful small and medium pores; strongly acid.

The A horizon ranges from dark gray (N 4/0) to light gray (5Y 6/1) in color. In some areas there is a weakly developed pan, 3 to 6 inches thick, at the lower limit of the A horizon. The B1g horizon ranges from light olive gray (5Y 6/2) to white (5Y 8/1) in color and from sandy loam to sand in texture. The depth to finer textured material ranges from 25 to 40 inches.

Pelham sand (Pe).—The surface layer of this soil is gray to dark-gray sand 6 to 12 inches thick. The subsoil is gray to white sand. The underlying material, beginning at a depth of 28 to 40 inches, is mottled gray, yellow, and yellowish-brown sandy loam to sandy clay. Included in the areas mapped are some areas where the slope is 2 to 5 percent and areas where the surface layer is loamy fine sand. Also included are some spots of a poorly drained soil that has a surface layer of silt loam.

This soil is very low in fertility and in available water capacity. Water moves rapidly through the uppermost 28 to 50 inches, but surface runoff is ponded or very slow.

Some of the acreage is used for corn and pasture, but yields are very low. Crops are damaged by lack of moisture late in summer and in fall because of the very low available water capacity. In winter, free water is at a depth of only 10 to 20 inches and in some years the soil is ponded most of the time. Wetness is the major limitation. (Capability unit IVw–11; woodland group C–2)

Plummer Series

Soils in the Plummer series are deep, poorly drained, sandy, and strongly acid. They developed in marine-deposited sand and loamy sand. They are widely scattered throughout the county but occur most commonly in the southern part as broad flats on uplands. The slope range is 0 to 2 percent. The native vegetation consists mainly of longleaf, loblolly, and slash pine but includes scattered cypress and gum. There are dense stands of waxmyrtle and wiregrass in some areas.

In this county Plummer soils are associated with Pansey, Ardilla, and Ocilla soils. In most places they are surrounded by higher lying, well-drained Alaga soils and somewhat excessively drained Troup soils. They are sandier than Pansey soils, sandier and more poorly drained than Ardilla soils, and more poorly drained than Ocilla soils.

Representative profile of Plummer loamy sand (0 to 2 percent slopes), SE¼NW¼ sec. 13, T. 7 N., R. 11 W., under a dense stand of wiregrass, 3 miles southeast of Cottonwood:

A1—0 to 4 inches, very dark gray (N 3/0) loamy sand; very weak, fine, granular structure; very friable; many grass roots; very strongly acid; clear, smooth boundary.

A21g—4 to 14 inches, dark-gray (N 4/0) loamy sand; very weak, fine, granular structure; very friable; many small grass roots; very strongly acid; clear, smooth boundary.

A22g—14 to 24 inches, light-gray (N 7/0) loamy sand; single grain; loose; few small grass roots; very strongly acid; gradual, smooth boundary.

A23g—24 to 35 inches, light-gray (N 7/0) loamy sand; many, medium, faint, pale-yellow (5Y 7/3) mottles and many, medium, prominent, yellowish-brown (10YR 5/8) mottles; single grain; loose; few fine roots; very strongly acid; gradual, smooth boundary.

A24g—35 to 43 inches, gray (N 6/0) sand; many, medium, distinct, pale-yellow (5Y 7/3) mottles and many, coarse, prominent, light olive-brown (2.5Y 5/6) mottles; structureless (massive and single grain); friable and very friable; many streaks of yellowish-brown (10YR 5/8) sandy loam; very strongly acid; gradual, smooth boundary.

Btg—43 to 55 inches, light-gray (10YR 7/1) sandy clay; many, coarse, prominent, brownish-yellow (10YR 6/6) mottles; massive; firm when moist, plastic when wet, hard when dry; few fine and medium pores; very strongly acid.

The A1 horizon ranges from dark gray (N 4/0) to black (N 2/0) in color. The A2 horizons range from light gray (N 7/0) to dark gray (N 4/0) in color and from loamy sand to sand in texture. In places the A2

horizons are mottled. Mottles in the Btg horizon occur in hues of gray, yellow, and brown. The texture of the Btg horizon ranges from sandy loam to sandy clay. The depth to this horizon ranges from 40 to 60 inches.

Plummer loamy sand (Pm).—The surface layer of this soil is dark-gray to black loamy sand 7 to 15 inches thick. The subsoil is gray loamy sand mottled with yellow and brown in the lower part. The underlying material, beginning at a depth of 40 to 60 inches, consists of mottled gray, yellow, and brown very firm sandy loam to sandy clay. Included in the areas mapped are small areas of Ocilla, Pansey, and Ardilla soils. Also included are small areas where the fine-textured underlying material begins at a depth of about 30 inches.

This soil is low in fertility and in available water capacity. In some areas the soils are moderately high in organic-matter content. Water enters and moves through the soil at a moderate or rapid rate. Movement of water through the fine-textured underlying material is slow or very slow. Tilth is fair, but if worked when too wet or too dry, the soil does not afford support and traction for machinery.

This soil is used mainly for woodland, but some areas are used for pasture and a small acreage for row crops. The water table is at the surface in winter and for several days after heavy rainfall in summer. In most areas free water is at a depth of 40 to 60 inches in dry seasons. Wetness is the major limitation. (Capability unit Vw-11; woodland group C-2)

Red Bay Series

Soils in the Red Bay series are deep, well drained, and medium acid or strongly acid. They developed in thick beds of medium-textured marine deposits. They occur on uplands throughout the county, mainly as broad flats or as gentle side slopes. The slope range is 0 to 12 percent. The native vegetation consists of longleaf and loblolly pine, scrub oak, dogwood, and wiregrass.

In this county Red Bay soils are associated with Orangeburg, Greenville, Americus, and Troup soils. They are more reddish in the A and B1 horizons than Orangeburg soils. They closely resemble Greenville soils but are coarser textured throughout the profile. They are finer textured than Americus soils and are finer textured and more reddish than Troup soils.

Representative profile of Red Bay sandy loam, 2 to 5 percent slopes, eroded, in a cultivated area, SW¼SW¼ SE¼NE¼ sec. 22, T. 7 N., R. 12 W.:

Ap—0 to 7 inches, dark reddish-brown (5YR 3/2) sandy loam; very weak, fine, granular structure; very friable; medium acid; clear, smooth boundary.

B1t—7 to 15 inches, dark reddish-brown (2.5YR 3/4) sandy loam; very weak, medium, subangular blocky structure; very friable; clay coatings on sand grains; many small and medium pores and root channels; strongly acid; clear, smooth boundary.

B21t—15 to 26 inches, dark-red (2.5YR 3/6) sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet; patchy clay films on vertical faces of peds; many small and medium pores; few root channels and wormholes; strongly acid; diffuse, smooth boundary.

B22t—26 to 42 inches, red (2.5YR 4/8) sandy clay loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky and slightly plastic when wet; many thin, discontinuous clay films on vertical faces of peds; many small pores; strongly acid; diffuse, smooth boundary.

B23t—42 to 54 inches +, red (2.5YR 4/8) sandy loam to sandy clay loam; very weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; few thin clay coatings on sand grains; many small and medium pores; texture becomes more sandy with increasing depth; strongly acid.

The A horizon ranges from dark brown (7.5YR 3/4) to dark reddish brown (2.5YR 2/4) in color. It is 7 to 12 inches thick in uneroded areas and 2 to 6 inches thick in eroded areas. The B2t horizons range from red (2.5YR 4/8) to dark red (10R 3/6) in color and from sandy loam to sandy clay loam in texture.

Red Bay sandy loam, 0 to 2 percent slopes (RbA).—The surface layer of this soil is very friable, dark-brown to dark reddish-brown fine sandy loam and sandy loam 7 to 12 inches thick. The upper part of the subsoil is red to reddish-brown, friable sandy loam, and the lower part is red to dark-red, friable sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet and becomes more sandy and less reddish with increasing depth. Included in the areas mapped are small areas of Greenville, Orangeburg, and Americus soils. Also included is a small acreage where the surface layer is loamy sand.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is very slow, and the erosion hazard is slight or nonexistent. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is well suited to all of the major crops grown in the county. (Capability unit I-12; woodland group C-3)

Red Bay sandy loam, 2 to 5 percent slopes, eroded (RbB2).—The surface layer of this soil is reddish-brown to dark reddish-brown, friable sandy loam 3 to 6 inches thick. The subsoil is red to dark-red, friable sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet and becomes more sandy and less reddish with increasing depth. Rills and shallow gullies are common, and there are a few gullies 4 to 30 feet deep. Included in the areas mapped is a small acreage of eroded Greenville and Orangeburg soils. Also included are a few severely eroded spots and areas where the surface layer is more than 6 inches thick.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow or medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content. A few clods form if this soil is plowed when wet, but they are usually weak and easily broken.

This soil is well suited to all kinds of crops commonly grown in the county (fig. 5). The erosion hazard is the major limitation. (Capability unit IIe-12; woodland group C-3)

Red Bay sandy loam, 5 to 8 percent slopes, eroded (RbC2).—The surface layer of this soil is reddish-brown to dark reddish-brown sandy loam 2 to 6 inches thick. The upper part of the subsoil is reddish-brown to dark-red, friable sandy loam, and the lower part is red to dark-red, friable sandy loam to sandy clay loam. Material sim-

Figure 5.—**Peanuts ready for harvest. Thirty-eight tons were harvested from the 28-acre field where these plants are growing. The soil is Red Bay sandy loam, 2 to 5 percent slopes, eroded.**

ilar to that of the subsoil extends to a depth of several feet and becomes more sandy and less reddish with increasing depth. Rills and shallow gullies are common, and there are a few gullies 4 to 30 feet deep. Included in the areas mapped are small areas of eroded Orangeburg and Greenville soils. Also included are less eroded areas where the surface layer is more than 6 inches thick and severely eroded spots where all of the surface layer and part of the subsoil have been lost. In addition, a small part of the acreage has a surface layer of loamy sand.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow or medium, and the erosion hazard is moderate. Gully erosion is a serious problem in some areas. Tilth is good, and the soil can be worked throughout a wide range of moisture content. A few clods form if this soil is plowed when wet, but they are usually weak and easily broken.

This soil is used for all kinds of crops commonly grown in the county. Crops are damaged by lack of moisture in most years. The erosion hazard is the major limitation. (Capability unit IIIe-12; woodland group C-3)

Red Bay sandy loam, 8 to 12 percent slopes, eroded (RbD2).—The surface layer of this soil is reddish-brown to dark reddish-brown sandy loam 2 to 6 inches thick. The subsoil is dark-red, friable sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet and becomes less reddish and more sandy with increasing depth. Rills and shallow gullies are common, and there are a few gullies 4 to 30 feet deep. Included in the areas mapped are small areas of eroded Greenville and Orangeburg soils, small areas of a less eroded soil that has a surface layer more than 6 inches thick, and small areas of a severely eroded soil from which all of the surface layer and part of the subsoil have been removed. Also included is a small acreage of loamy sand.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is rapid, and the erosion hazard is severe. Gully erosion is a serious problem in some areas. Tilth is good, and the soil can be worked throughout a wide range of moisture content.

Nearly all of the acreage is used for woodland and pasture. The pasture plants are damaged by lack of moisture in most years. The erosion hazard is the major limitation. (Capability unit IVe-19; woodland group C-3)

Rough Broken and Stony Land

Rough broken and stony land (Ro) consists of soils and soil material formed in marine deposits on uplands. The slope range is 12 to 25 percent. This land type occurs on short side slopes in areas dissected by many shallow drainageways. Some of the drainageways contain recent deposits of alluvium. All of the acreage is in the Omusee Creek watershed.

About 35 percent of this land type consists of soils similar to those of the Troup, Alaga, Americus, and Red Bay series. These soils are mainly on foot slopes adjacent to streams.

About 65 percent consists mainly of very shallow, shallow, and moderately deep soil material that is extremely variable in color, texture, and consistence. These areas occur on the upper part of slopes. Most of the acreage is moderately or severely eroded. In uneroded areas the surface layer is grayish-brown, very dark grayish-brown, or dark reddish-brown fine sandy loam. The subsoil is mainly red or reddish sandy clay loam to clay 4 to 25 inches thick. In many places little or no development has taken place in the subsoil, and the surface layer directly overlies compact, very firm, stratified sand, sandy loam, sandy clay, and clay of various colors, including purple, black, brown, dark red, pale yellow, and white. In some places the underlying material consists of highly mottled, slightly cemented sandy clay loam or sandy clay.

In places the surface is almost completely covered with rocks, and in other places there are few rocks either on the surface or in the profile. The rocks are mainly iron ore or siliceous limestone that contains many fossils. The iron ore rocks are flat and range from less than 1/4 inch to 2 feet in diameter. In a few spots thin layers of iron ore are buried in the soil. Some of the limestone is in fragments less than an inch in diameter, and some consists of rounded or angular stones up to several feet across.

This land type is used mainly for woodland. The slope, the roughness of the surface, the variations in texture, and the erosion hazard are the major limitations. (Capability unit VIIe-19; woodland group C-8)

Sunsweet Series

Soils in the Sunsweet series are well drained. They developed on uplands in fine-textured marine deposits. The slope range is 2 to 12 percent.

In this county Sunsweet soils occur with Carnegie, Tifton, Varina, and Orangeburg soils. They are similar to Carnegie and Tifton soils, but soft plinthite is nearer the surface than in those soils. They contain many iron concretions, which are lacking in Varina soils, and they have soft plinthite nearer the surface than those soils. They are finer textured than Orangeburg

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soils, which do not contain iron concretions or plinthite. In Houston County, Sunsweet soils are mapped only in complexes with Carnegie soils and with Stony land.

Representative profile of Sunsweet fine sandy loam (8 percent slope) in a cultivated field, NE¼NE¼SW¼ sec. 23, T. 2 N., R. 27 E.:

Ap—0 to 5 inches, dark-brown (7.5YR 4/4) fine sandy loam; weak, fine, granular structure; friable when moist, slightly sticky when wet; many (about 17 percent) small, brown iron concretions; some mixing with horizon below by plowing; medium acid; abrupt, smooth boundary.

B2t—5 to 9 inches, red (2.5YR 4/6) sandy clay; weak, medium, subangular blocky structure; firm when moist, sticky and slightly plastic when wet, hard when dry; few patchy clay films on vertical and horizontal faces of peds; common (about 10 percent) iron concretions; medium acid; clear, wavy boundary.

B3t—9 to 60 inches, reticulately mottled red (10YR 4/8), yellow (10YR 7/8), and pinkish-white (7.5YR 8/2) sandy clay loam (soft plinthite); weak, medium, subangular blocky structure; very firm when moist, hard when dry; compact in place; few discontinuous clay films on vertical and horizontal surfaces of peds; red mottles decrease with increased depth; very strongly acid.

The Ap horizon ranges from dark grayish brown (10YR 4/2) through reddish brown (5YR 4/3) to yellowish red (5YR 4/6) in color and from 2 to 7 inches in thickness. The part of the B horizon above the soft plinthite ranges from yellowish brown (10YR 5/8) to red (10R 4/8) in color and from heavy sandy clay loam to clay in texture. Soft plinthite, consisting of highly mottled sandy clay loam to sandy clay, begins at a depth of less than 16 inches. Many profiles lack a B2t horizon, and in those places the Ap horizon directly overlies the layer containing soft plinthite. In places massive, coarser. textured material begins below a depth of 60 inches.

Swamp

Swamp (Sw) consists of large depressions and broad flats that are covered with shallow water most of the time. The soil material is generally dark colored because. the content of organic matter is relatively high. The texture varies from one place to another, but most commonly the uppermost 30 inches is silt loam and silty clay loam. In some areas the soil material consists of recent alluvial deposits of sand, sandy loam, silt loam, and silty clay. Small areas that are under water only in extremely rainy seasons are included in the areas mapped.

The vegetation consists of gum, cypress, poplar, ash, water oak, other water-tolerant trees, and a dense undergrowth of gallberry, huckleberry, bamboo briers, and many other shrubs and bushes.

Swamp can be used for wildlife habitats and for the production of timber. (Capability unit VIIw–11; woodland group C–8)

Tifton Series

Soils in the Tifton series are deep, well drained, and pebbly. They developed in medium-textured and fine-textured marine deposits. They occur on uplands. The slope range is 0 to 8 percent. The native vegetation consists mainly of longleaf and loblolly pine but includes some oak, hickory, and dogwood.

In this county Tifton soils are associated with Carnegie, Varina, Dothan, and Cowarts soils. They are similar to Carnegie soils in texture and horizonation but have a thicker B horizon. In most places their A horizon is thicker than that of Varina soils, and they have a higher content of iron concretions than those soils. They have more iron concretions than Dothan and Cowarts soils, and the upper part of their B horizon is finer textured than that of those soils.

Representative profile of Tifton fine sandy loam, 2 to 5 percent slopes, eroded, in a cultivated area, SE¼NW¼NE¼ sec. 12, T. 3 N., R. 26 E., 150 yards north of Ross Clark traffic circle, on the east side of U.S. Highway 431:

Apcn—0 to 6 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; many (about 20 percent) small, hard, brown iron concretions ⅛ to ½ inch in diameter; medium acid; abrupt, smooth boundary.

B1tcn—6 to 14 inches, yellowish-brown (10YR 5/8) heavy sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; many (about 25 percent) small, hard, brown iron concretions ⅛ to ½ inch in diameter; few thin patchy clay films on vertical faces of peds; strongly acid; gradual, wavy boundary.

B21tcn—14 to 35 inches, yellowish-brown (10YR 5/8) heavy sandy clay loam; weak, medium, subangular blocky structure; firm when moist, sticky and slightly plastic when wet, hard when dry; many (about 30 percent) small, hard, brown iron concretions ⅛ to ½ inch in diameter; few clay films on vertical faces of peds; strongly acid; gradual, wavy boundary.

B22t—35 to 62 inches, reticulately mottled strong-brown (7.5YR 5/8), brownish-yellow (10YR 6/6), and light-gray (10YR 7/1) sandy clay loam; soft plinthite; moderate, medium, subangular blocky structure; firm when moist, very hard when dry; weakly cemented; few soft, brown iron concretions; strongly acid; gradual, smooth boundary.

B23t—62 to 72 inches, brownish-yellow (10YR 6/8) sandy clay loam with many, coarse, prominent, white (N 8/0) mottles and many, medium, distinct, reddish-brown (5YR 4/4) mottles; strong, medium, subangular blocky structure; very firm when moist, very hard when dry; reddish-brown colors are soft concretions; white mottles have considerably higher clay content than matrix; very strongly acid.

The A horizon ranges from yellowish brown (10YR 5/4) to grayish brown (10YR 4/2) in color and from 3 to 12 inches in thickness. The B1t horizon ranges from brownish yellow (10YR 6/6) to yellowish red (5YR 4/8) in color and from heavy sandy loam to sandy clay loam in texture. The B21t horizon ranges from yellowish brown (10YR 5/8) to red (2.5YR 4/8) in color and from sandy clay loam to sandy clay in texture. The content of concretions ranges from 10 to 35 percent. The depth to the B22t horizon, which contains soft plinthite, ranges from 35 to 45 inches.

Tifton fine sandy loam, 0 to 2 percent slopes (TfA).—The surface layer of this soil is grayish-brown to dark grayish-brown fine sandy loam 7 to 12 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable heavy sandy loam or sandy clay loam, and the lower part is yellowish-brown to red sandy clay loam to sandy clay. Hard, brown iron concretions make

up 10 to 35 percent of the surface layer and the subsoil. Multicolored, very firm sandy clay loam to clay begins at a depth of 35 to 45 inches. Included in the areas mapped are small areas of Dothan, Carnegie, and Varina soils. Also included is a small acreage where the surface layer is loamy fine sand.

This soil is low in fertility and moderately high in available water capacity. Its organic-matter content is low. Water enters and moves through the profile at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting. Areas that have been used several years for row crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

Most of the acreage is used for crops. There are no serious limitations. (Capability unit I–11; woodland group C–3)

Tifton fine sandy loam, 2 to 5 percent slopes, eroded (TfB2).—The surface layer of this soil is yellowish-brown to dark grayish-brown, friable fine sandy loam 3 to 6 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable heavy sandy loam or sandy clay loam, and the lower part is yellowish-brown to red sandy clay loam to sandy clay. Small, hard iron concretions make up 10 to 35 percent of the surface layer and the subsoil. Multicolored, very firm sandy clay loam to clay (soft plinthite) begins at a depth of 35 to 45 inches. Included in the areas mapped are small areas of Dothan, Carnegie, and Varina soils. Also included are less eroded areas and a small acreage where the surface layer is loamy sand.

This soil is low in fertility and moderately high in available water capacity. Its organic-matter content is low. Water enters and moves through the soil at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is fair or good, but if worked when too wet or too dry, the soil will clod and crust. Areas that have been used several years for row crops have developed a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

Most of the acreage is used for crops. The erosion hazard is the major limitation. (Capability unit IIe–11; woodland group C–3)

Tifton fine sandy loam, 5 to 8 percent slopes, eroded (TfC2).—The surface layer of this soil is yellowish-brown to dark grayish-brown, friable fine sandy loam 3 to 6 inches thick. The upper part of the subsoil is yellowish-brown to yellowish-red, friable heavy sandy loam or sandy clay loam, and the lower part is firm, yellowish-brown to red sandy clay loam to sandy clay. Iron concretions make up 10 to 35 percent of the surface layer and the subsoil. Multicolored, very firm sandy clay loam to clay (soft plinthite) begins at a depth of 35 to 45 inches. Included in the areas mapped are small areas of Dothan, Carnegie, and Varina soils. Also included are spots where the soft plinthite is at a depth of less than 35 inches and a small acreage where the surface layer is less eroded and is more than 6 inches thick.

This soil occurs on side slopes where it receives much runoff water from adjacent soils. Shallow gullies are common, and there are a few gullies that are not crossable with farm machinery. In fields that have been terraced, most of the grayish-brown surface layer is on and near the terraces, leaving a strip between terraces where the yellowish-brown subsoil is exposed.

This soil is low in fertility and in available water capacity. Its organic-matter content is low. Water enters and moves through the soil at a moderate rate. Surface runoff is rapid, and the erosion hazard is severe. Tilth is fair, but if worked when too wet or too dry, the soil will clod.

This soil is used for woodland, pasture, and row crops. The erosion hazard and the slope are the major limitations. (Capability unit IIIe–11; woodland group C–3)

Troup Series

Soils in the Troup series are deep, coarse textured, and somewhat excessively drained. They developed in beds of marine-deposited sand and loamy sand. They occur in areas where the slope range is 0 to 5 percent, mainly as broad flats.

In this county Troup soils are associated with Alaga, Red Bay, Orangeburg, and Americus soils. They are more reddish and less sandy in the subsoil than Alaga soils. They are sandier throughout the profile than Red Bay and Orangeburg soils. They are less reddish than Americus soils.

Representative profile of Troup loamy sand, 0 to 5 percent slopes, in a wooded area, SW¼SE¼SW¼ sec. 21, T. 1 N., R. 30 E., 1.3 miles north of Chattahoochee State Park:

Ap—0 to 5 inches, brown (7.5YR 4/4) loamy sand; weak, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

A21—5 to 15 inches, strong-brown (7.5YR 5/6) loamy sand; weak, granular structure; very friable; strongly acid; gradual, smooth boundary.

A22—15 to 44 inches, strong-brown (7.5YR 5/8) loamy sand; very weak, medium, granular structure; very friable; strongly acid; diffuse, smooth boundary.

B2t—44 to 66 inches +, red (2.5YR 4/8) light sandy loam; weak, medium, subangular blocky structure; very friable; sand grains coated and bridged; strongly acid.

The Ap horizon ranges from dark grayish brown (10YR 4/2) through brown (7.5YR 4/4) and yellowish brown (10YR 5/4) in color. The upper part of the A2 horizon ranges from strong brown (7.5YR 5/6) to yellowish red (5YR 4/8) in color. The B horizon ranges from light sandy loam to sandy clay loam in texture. The depth to the B horizon ranges from 40 to 60 inches.

Troup loamy sand, 0 to 5 percent slopes (TrB).—The surface layer of this soil is dark grayish-brown to yellowish-brown loamy sand 7 to 11 inches thick. The subsoil is strong-brown to yellowish-red, very friable loamy sand 29 to more than 50 inches thick. Yellowish-red to dark-red sandy loam to sandy clay loam begins at a depth of more than 40 inches. Included in the areas mapped are small areas of Alaga, Orangeburg, and Lucy soils. Also included is a small acreage where the surface layer is loamy fine sand.

This soil is very low in fertility and low in available water capacity. Surface runoff is very slow, and there is no erosion hazard. Water enters and moves through the

soil rapidly. Tilth is good, and the soil can be worked throughout a wide range of moisture content. Root growth is not restricted.

Most of this soil is used for pasture and cropland. Droughtiness and susceptibility to leaching are the main limitations. (Capability unit IIIs-11; woodland group C-1)

Varina Series

Soils in the Varina series are deep, well drained, and medium acid to very strongly acid. They developed in thick beds of medium-textured and fine-textured marine deposits. They occur on uplands as broad, flat ridgetops and as gentle side slopes. The slope range is 0 to 5 percent. Hard, brown iron concretions make up as much as 10 percent of the soil mass.

In this county Varina soils are associated with Faceville, Tifton, and Dothan soils. They are similar in texture and horizonation to Faceville soils, but they are less reddish than those soils and they contain plinthite, which Faceville soils lack. They have a thinner surface layer and fewer iron concretions than Tifton soils and are more clayey in the upper part of their subsoil. Varina soils have a thinner surface layer than Dothan soils, and they have a sharper boundary between the surface layer and the subsoil. They are much more clayey in the upper part of their subsoil than Dothan soils.

Representative profile of Varina fine sandy loam, 2 to 5 percent slopes, eroded, NW¼SW¼NW¼ sec. 23, T. 2 N., R. 26 E., 4 miles south of Dothan and one-fourth of a mile west of U.S. Highway 231:

Ap—0 to 5 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; few fine roots; few (about 3 percent) hard, brown iron concretions; some small, yellowish-brown clods brought up from horizon below by plowing; medium acid; abrupt, smooth boundary.

B21t—5 to 12 inches, yellowish-brown (10YR 5/8) clay loam; weak, medium, subangular blocky structure; friable when moist, sticky when wet, slightly hard when dry; many patchy clay films on vertical and horizontal faces of peds; few (about 3 percent) hard, brown iron concretions; many, coarse, angular grains of white quartz; strongly acid; diffuse, smooth boundary.

B22t—12 to 30 inches, yellowish-brown (10YR 5/8) sandy clay; weak, medium, subangular blocky structure; friable when moist, very sticky when wet, hard when dry; many clay films on vertical faces of peds; common, coarse, angular grains of white quartz; strongly acid; diffuse, smooth boundary.

B23t—30 to 40 inches, yellowish-brown (10YR 5/8) sandy clay loam; common, medium, distinct, strong-brown (7.5YR 5/8) mottles; weak, medium, subangular blocky structure; friable when moist, slightly plastic when wet, slightly hard when dry; few patchy clay films; common fine pores; strongly acid; gradual, smooth boundary.

B3t—40 to 60 inches, reticulately mottled strong-brown (7.5YR 5/8), yellowish-brown (10YR 5/8), red (2.5YR 5/8), and very pale brown (10YR 7/3) sandy clay loam; soft plinthite; weak, medium, subangular blocky structure; very firm when moist, hard when dry; slightly cemented and compact; many fine and medium pores; common thin streaks and small pockets of pale-brown coarse sandy loam or loamy coarse sand; strongly acid.

The A horizon ranges from light yellowish brown (10YR 6/4) to dark grayish brown (10YR 4/2) in color and from 2 to 8 inches in thickness. The B21t horizon is heavy sandy clay loam or clay loam in texture, and the B22t horizon ranges from clay loam to sandy clay. The B23t horizon is sandy clay loam or clay loam. The depth to the B3t horizon ranges from 36 to 50 inches. This horizon has thin layers, streaks, or pockets of white or gray coarse sandy loam and loamy coarse sand in places.

Varina fine sandy loam, 0 to 2 percent slopes (VaA).—The surface layer of this soil is grayish-brown to very dark grayish-brown, friable fine sandy loam 6 to 8 inches thick. The subsoil is yellowish-brown, friable or firm heavy sandy clay loam to sandy clay that is mottled in the lower part. The dominant texture is clay loam. Firm, compacted sandy clay loam to sandy clay, reticulately mottled with yellowish brown, strong brown, yellowish red, and gray, begins at a depth of 36 to 50 inches. Included in the areas mapped are areas where the compacted material is at a depth of less than 36 inches and a small acreage where the surface layer is loamy fine sand.

This soil is low in fertility and moderately high in available water capacity. Water enters and moves through the soil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting. Areas that have been used several years for cultivated crops have a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

This soil is used for all kinds of crops grown in the county. There are no major limitations. (Capability unit I-11; woodland group C-3)

Varina fine sandy loam, 2 to 5 percent slopes, eroded (VaB2).—The surface layer of this soil is light yellowish-brown to very dark grayish-brown fine sandy loam 2 to 6 inches thick. The subsoil is yellowish-brown heavy sandy clay loam to sandy clay that is mottled in the lower part. Highly mottled yellowish-brown, strong-brown, yellowish-red, and gray, compacted sandy clay loam to sandy clay begins at a depth of 36 to 50 inches. Included in the areas mapped are areas where the underlying material is at a depth of less than 36 inches, areas where the surface layer is more than 6 inches of loamy fine sand, and severely eroded spots where the surface layer is sandy clay loam.

This soil is low in fertility and medium in available water capacity. Water enters and moves through the profile at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is good, and the soil can be worked throughout a wide range of moisture content. Some clods form if the soil is plowed when wet. Areas that have been used several years for row crops have a traffic pan at the lower limit of the plow layer. This pan slows the downward movement of water and restricts the growth of roots.

This soil is used for all kinds of crops grown in the county. The erosion hazard is the major limitation. (Capability unit IIe-11; woodland group C-3)

Wagram Series

Soils in the Wagram series are deep, well drained, and strongly acid. They have a thick, sandy surface layer.

They occur on uplands, mainly on gentle side slopes and in gently undulating areas. The slope range is 0 to 8 percent. The native vegetation consists chiefly of longleaf and loblolly pine but includes scattered dogwood and scrub oak.

In this county Wagram soils are associated with Alaga, Lucy, Troup, Dothan, and Orangeburg soils. They are finer textured in the lower part of the subsoil than Alaga and Troup soils and are more sandy in the upper part of the subsoil than Dothan and Orangeburg soils. Their subsoil is less reddish than that of Lucy soils.

Representative profile of Wagram loamy sand, 2 to 5 percent slopes, in a wooded area, SW¼NW¼NW¼ SE¼ sec. 15, T. 7 N., R. 12 W.:

A1—0 to 4 inches, light brownish-gray (10YR 6/2) loamy sand; very weak, fine, granular structure; very friable; many grass roots and a few woody tree roots; very strongly acid; clear, smooth boundary.

A2—4 to 9 inches, dark yellowish-brown (10YR 4/4) loamy fine sand; very weak, fine, granular structure; very friable; common grass roots and few woody tree roots; strongly acid; clear, smooth boundary.

A3—9 to 24 inches, brown (10YR 5/3) loamy fine sand; very weak, medium, subangular blocky structure; very friable; few grass roots and few medium woody roots; strongly acid; gradual, smooth boundary.

B1—24 to 28 inches, yellowish-brown (10YR 5/8) light sandy loam; weak, medium, subangular blocky structure; very friable; few grass and tree roots; much clay bridging of sand grains; strongly acid; diffuse, smooth boundary.

B2t—28 to 50 inches +, yellowish-brown (10YR 5/8) sandy loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; few grass and tree roots; few patchy clay films on vertical faces of peds; strongly acid.

The part of the A horizon above the A3 horizon ranges from dark grayish brown (10YR 4/2) to light brownish gray (10YR 6/2) in color. The A3 horizon ranges from strong brown (7.5YR 5/6) to yellow (10YR 7/6). The B2t horizon ranges from yellowish brown (10YR 5/8) to strong brown (7.5YR 5/8) in color and from sandy loam to sandy clay loam in texture. The depth to the B2t horizon ranges from 20 to 30 inches.

Wagram loamy sand, 0 to 2 percent slopes (WaA).—The surface layer of this soil is very friable loamy sand 20 to 30 inches thick. The uppermost 6 to 12 inches is dark grayish brown to light grayish brown, and the lower part is yellowish brown. The subsoil is yellowish-brown to strong-brown, friable sandy loam to firm sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet. Included in the areas mapped are small depressions where the surface layer is sandy loam and a small acreage that is moderately well drained and mottled with gray at a depth of 25 to 30 inches. Also included are areas of Alaga, Lucy, and Dothan soils.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil rapidly. Surface runoff is very slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for all kinds of crops grown in the county. Yields of most crops are reduced by droughtiness during dry seasons and by leaching of fertilizer in wet seasons. (Capability unit IIs–12; woodland group C–3)

Wagram loamy sand, 2 to 5 percent slopes (WaB).—The surface layer of this soil is loamy sand 20 to 30 inches thick. The upper part is grayish-brown to dark grayish-brown, very friable loamy fine sand 5 to 9 inches thick. The lower part is yellowish-brown, very friable loamy fine sand 9 to 25 inches thick. The upper part of the subsoil is yellowish-brown to strong-brown, friable sandy loam, and the lower part is yellowish-brown to strong-brown, friable or firm sandy loam to sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet in some places. Included in the areas mapped are small areas of Troup, Alaga, Dothan, Orangeburg, Lucy, and Iuka soils.

This soil is low in fertility and in available water capacity. Water enters and moves through it rapidly. Surface runoff is slow, and the erosion hazard is slight. Tilth is good, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for all kinds of crops grown in the county. Droughtiness and the erosion hazard are the major limitations. (Capability unit IIs–12; woodland group C–3).

Wagram loamy sand, 5 to 8 percent slopes (WaC).—The surface layer of this soil is very friable loamy sand 20 to 30 inches thick. The upper part is dark grayish brown, and the lower part is yellowish brown. In places the texture of the lower part of the surface layer is light sandy loam. The subsoil is yellowish-brown to strong-brown, friable sandy loam to firm sandy clay loam. Material similar to that of the subsoil extends to a depth of several feet.

This soil is low in fertility and in available water capacity. Water enters and moves through the soil rapidly. Surface runoff is medium, and the erosion hazard is moderate. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

Rills and shallow gullies are numerous in some areas, and there are deep gullies in places. The slope and the unven surface limit the use of four-row equipment on this soil. Yields from most crops are reduced by lack of moisture and leaching of fertilizer. (Capability unit IIIs–17; woodland group C–3).

Wickham Series

Soils in the Wickham series are deep and well drained. They developed in old loamy alluvium. They occur on stream terraces and in gently undulating areas on short side slopes, rounded knolls, and long, narrow ridgetops. The slope range is 0 to 5 percent. Some of the areas are subject to flooding. The native vegetation consists of longleaf, loblolly, and slash pine mixed with gum and other hardwoods.

In this county Wickham soils occur with Alaga, Flint, and Maxton soils. They are redder than Alaga soils, and their subsoil is finer textured. They are redder than Flint soils, better drained, and less mottled. Their subsoil is redder, finer textured, and more strongly developed than that of Maxton soils.

Representative profile of Wickham fine sandy loam, 0 to 2 percent slopes, in a plantation of young pines, SE¼NW¼NE¼ sec. 29, T. 2 N., R. 30 E., 20 yards north of U.S. Highway 84 and one-fourth of a mile west of the Chattahoochee River:

Ap—0 to 7 inches, dark-brown (7.5YR 3/2) fine sandy loam; weak, fine, granular structure; very friable; many fine mica flakes; medium acid; gradual, smooth boundary.

A3—7 to 10 inches, strong-brown (7.5YR 5/6) sandy loam; weak, fine, granular structure; very friable; many mica flakes; medium acid; gradual, smooth boundary.

B1—10 to 15 inches, red (2.5YR 4/6) sandy clay loam; weak, medium, subangular blocky structure; friable when moist, slightly sticky when wet, slightly hard when dry; many thin patchy clay films on vertical faces of peds; many fine mica flakes; common root channels filled with material from horizon above; strongly acid; diffuse, smooth boundary.

B21t—15 to 26 inches, red (2.5YR 4/6) sandy clay loam; moderate or strong, medium and fine, subangular blocky structure; firm when moist, plastic when wet, hard when dry; continuous clay films on all faces of peds; many fine mica flakes; strongly acid; diffuse, smooth boundary.

B22t—26 to 36 inches, red (2.5YR 5/8) light clay loam; weak to moderate, medium, subangular blocky structure; firm when moist, hard when dry, sticky and slightly plastic when wet; many clay films on vertical faces of peds; common fine mica flakes; strongly acid; diffuse, smooth boundary.

B23t—36 to 44 inches, red (2.5YR 5/8) heavy sandy loam; weak, medium, subangular blocky structure; very friable; few patchy clay films on vertical faces of peds; common fine mica flakes; strongly acid; diffuse, smooth boundary.

B3—44 to 66 inches, light-red (2.5YR 6/8) heavy sandy loam; structureless; very friable; most sand grains coated and bridged with clay; common fine mica flakes; strongly acid; diffuse, smooth boundary.

IIC1—66 to 72 inches +, yellowish-red (5YR 4/8) sand; structureless (single grain); loose; many, small, angular quartz fragments; few fine mica flakes; strongly acid.

The A horizon ranges from very dark grayish brown (10YR 3/2) through brown (10YR 5/3) to dark brown (7.5YR 4/2) in color and from 7 to 14 inches in thickness. Some profiles have a B1t horizon, generally less than 8 inches thick. This horizon ranges from yellowish red (5YR 5/6) to red (2.5YR 4/6) in color and from sandy loam to sandy clay loam in texture. The B2t horizon ranges from yellowish red (5YR 4/8) to dark red (2.5YR 3/6) in color and from sandy clay loam to clay loam in texture. The B3t horizon ranges from yellowish red to red in color and from sandy loam to light sandy clay loam in texture. Yellowish-brown to red loamy sand, sand, or sand and gravel begin at a depth of more than 60 inches.

Wickham fine sandy loam, 0 to 2 percent slopes (WcA).—The surface layer of this soil is very friable, dark grayish-brown to brown fine sandy loam 7 to 14 inches thick. The upper part of the subsoil is yellowish-red to red sandy clay loam to clay loam, and the lower part is friable sandy loam to sandy clay loam. Very friable or loose loamy sand, sand, or sand and gravel begins at a depth of 36 to 60 inches. All layers of this soil contain many fine mica flakes. Included in the areas mapped are small depressions where the surface layer is very dark gray loam 7 to 15 inches thick. These depressions are ponded for several hours after rainfall. Also included are small areas of Maxton and Flint soils, areas where the subsoil is more clayey, and a small acreage where the surface layer is loamy sand.

This soil is low in fertility and low to moderately high in available water capacity. The organic-matter content is low. Water enters the surface layer rapidly and moves through the subsoil at a moderate rate. Surface runoff is slow, and the erosion hazard is slight. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content without clodding or crusting.

This soil is used for all kinds of crops grown in the county. There are no major limitations. (Capability unit I–11; woodland group C–3)

Wickham fine sandy loam, 2 to 5 percent slopes (WcB).—The surface layer of this soil is very friable, dark grayish-brown to brown fine sandy loam 7 to 14 inches thick. The upper part of the subsoil is yellowish-red to red sandy clay loam to clay, and the lower part is friable sandy loam to sandy clay loam. Very friable or loose loamy sand, sand, or sand and gravel begins at a depth of 34 to 60 inches. All layers of this soil contain many fine mica flakes. Included in the areas mapped are small areas of Maxton and Flint soils, areas where the subsoil is more clayey, some eroded areas where the surface layer is less than 7 inches thick, and a small acreage where the surface layer is loamy sand.

This soil is low in fertility and low to moderately high in available water capacity. The organic-matter content is low. Water enters the surface layer rapidly and moves through the subsoil at a moderate rate. Surface runoff is medium, and the erosion hazard is moderate. Tilth is excellent, and the soil can be worked throughout a wide range of moisture content. Clods form if the eroded spots are plowed when too wet or too dry.

This soil is used for all kinds of crops grown in the county. The erosion hazard is the major limitation. (Capability unit IIe–11; woodland group C–3)

Wicksburg Series

Soils in the Wicksburg series are well drained. They developed on uplands in marine-deposited sand and clay. The slope range is 2 to 12 percent. They have a thick, coarse-textured A horizon and a fine-textured B horizon. The native vegetation consists mainly of longleaf and loblolly pine but includes a little oak, hickory, and dogwood.

In this county Wicksburg soils are associated with Esto, Alaga, Carnegie, and Dothan soils. They are finer textured in their subsoil than Alaga, Carnegie, and Dothan soils. Wicksburg and Esto soils lack the layer of plinthite that is common in Carnegie and Dothan soils.

Representative profile of Wicksburg loamy sand (2 to 5 percent slopes) in a cultivated area, NW¼NE¼ SW¼NW¼ sec. 24, T. 1 N., R. 28 E.:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) loamy sand; weak, fine, granular structure; very friable; medium acid; clear, smooth boundary.

A2—9 to 26 inches, yellowish-brown (10YR 5/4) loamy sand; weak, fine, granular structure; very friable; strongly acid; many wormholes and root channels filled with material from Ap horizon; abrupt, wavy boundary.

B21t—26 to 30 inches, yellowish-brown (10YR 5/4) sandy

clay loam; few, medium, prominent, very pale brown (10YR 7/4) mottles; moderate, medium, subangular blocky structure; firm; patchy clay films on vertical and horizontal surfaces of peds; strongly acid; gradual, wavy boundary.

B22t—30 to 76 inches, yellowish-brown (10YR 5/8) clay; many, medium, distinct mottles of red (2.5YR 4/8), white (10YR 8/1), and strong brown (7.5YR 5/8); moderate to strong, medium, subangular blocky structure; very firm; clay films on vertical and horizontal surfaces of peds; strongly acid.

The Ap horizon ranges from light brownish gray (10YR 6/2) to dark grayish brown (2.5Y 4/2) in color. The A2 horizon ranges from brownish yellow (10YR 6/6) to strong brown (7.5YR 5/8) in color. The thickness of the A horizon ranges from 20 to 30 inches. In some places, the B21t horizon is lacking and the loamy sand directly overlies the clayey B22t horizon. The B21t horizon ranges from heavy sandy loam to clay loam in texture and the B22t horizon ranges from sandy clay to clay.

Wicksburg-Esto complex, 2 to 5 percent slopes (WeB).—About 60 percent of this complex consists of Wicksburg soils, 25 percent of Esto soils, and 10 percent of Alaga soils. Many spots of Dothan, Orangeburg, Grangeburg, and Ocilla soils make up the rest. There are a few rills and shallow gullies. Included in the areas mapped are spots of Esto soils, from which most of the surface layer has been removed by erosion.

The Wicksburg soils have a surface layer of brownish-gray to dark-gray loamy sand, which is underlain by brownish-yellow to yellowish-brown loamy sand. Mottled sandy clay to clay begins at a depth of 20 to 30 inches.

The Esto soils have a surface layer of dark-gray to gray loamy sand 4 to 18 inches thick. The subsoil consists of olive-yellow to strong-brown sandy loam to clay mottled with gray in the lower part. Multicolored material of varying texture begins at a depth of 14 to 35 inches.

These soils are very low in fertility and in available water capacity. Water enters and moves through the loamy sand rapidly, but it moves through the subsoil very slowly. Surface runoff is slow or medium, and the erosion hazard is slight or moderate.

These soils are used for all kinds of crops grown in the county. Yields are usually low because of the very low fertility and available moisture capacity. (Capability unit IVs–11, woodland group C–5)

Wicksburg-Esto complex, 5 to 8 percent slopes, eroded (WeC2).—About 50 percent of this complex consists of Wicksburg soils, 30 percent of Esto soils, 10 percent of Alaga soils, and about 10 percent of Dothan, Orangeburg, Sunsweet, and Wagram soils. Shallow gullies are common, and deep gullies occur in some areas of Wicksburg soils. Included in the areas mapped are some severely eroded spots. In some of these places erosion has removed all of the surface layer of the Esto soils.

The Wicksburg soils have a surface layer of grayish-brown to dark-gray loamy sand in the upper part and brownish-yellow to strong-brown loamy sand in the lower part. Their subsoil, beginning at a depth of 20 to 30 inches, consists of mottled sandy clay to clay.

The Esto soils have a surface layer of dark-gray to gray loamy sand 2 to 6 inches thick. In some spots the loamy sand is 20 inches thick, and in these places the soil material is pale yellow in color below a depth of 6 inches. The subsoil is olive-yellow to strong-brown, firm sandy clay loam to clay. Multicolored material of varying texture begins at a depth of 10 to 30 inches.

These soils are very low in fertility and in available water capacity. Infiltration and permeability are rapid to slow. Surface runoff is rapid, and the erosion hazard is severe.

Most of this unit is used for timber or forage crops. Droughtiness and the erosion hazard are the major limitations. (Capability unit IVs–11; woodland group C–5)

Wicksburg-Esto complex, 8 to 12 percent slopes, eroded (WeD2).—About 35 percent of this complex consists of Wicksburg soils, 40 percent of Esto soils, and 25 percent of Alaga, Orangeburg, and Carnegie soils. The surface is rough. Rills and shallow gullies are numerous. Included in the areas mapped are severely eroded spots and a few areas where the slope is as much as 17 percent.

The Wicksburg soils have a surface layer of grayish-brown to dark grayish-brown loamy sand. Their subsoil consists of mottled sandy clay loam to clay, beginning at a depth of 20 to 30 inches.

The Esto soils have a surface layer of dark-gray to gray loamy sand, but most of the original surface layer has been lost through erosion. Their subsoil is strong-brown to pale-yellow, very firm sandy clay loam to clay 4 to 12 inches thick. The underlying material consists of multicolored, interbedded layers of compact sandy loam, sandy clay, and clay.

These soils are very low in fertility and in available water capacity. Surface runoff is rapid, and the erosion hazard is severe.

Most of the acreage is used for woodland or pasture. Droughtiness, the slope, the erosion hazard, and the rough surface are the major limitations. (Capability unit IVs–11; woodland group C–5)

Use and Management of the Soils

This section discusses use and management of the soils of Houston County for crops and pasture, woodland, wildlife, and engineering. It also gives predicted yields of principal crops under two levels of management.

In the following pages the capability classification system is explained, and the capability units are described.

Capability Groups of Soils

Capability classification is the grouping of soils to show, in a general way, their suitability for most kinds of farming. It is a practical classification based on limitations of the soils, the risk of damage when they are used, and the way they respond to treatment. The soils are classified according to degree and kind of permanent limitation, but without consideration of major and generally expensive landforming that would change the slope, depth, or other characteristics of the soil; and without consideration of possible but unlikely major reclamation projects.

In the capability system, all the soils are grouped at three levels: the capability class, the subclass, and the unit. These are discussed in the following paragraphs.

Capability Classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that restrict the choice of plants, require very careful management, or both.

Class V soils are subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife food and cover.

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife food and cover.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.

Class VIII soils and landforms have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife, or water supply, or to esthetic purposes. (None in this county.)

Capability Subclasses are groups within one class; they are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses, because the soils of this class have few limitations. Class V can contain, at the most, only subclasses indicated by *w*, *s*, and *c*, because the soils in it are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife, or recreation.

Capability Units are groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe-11 or IIIe-12. Thus, in one symbol, the Roman numeral designates the capability class, or degree of limitation, and the small letter indicates the subclass, or kind of limitation, as defined in the foregoing paragraph. The Arabic numeral specifically identifies the capability unit. In Houston County, the capability units are not numbered consecutively within the subclass, because they fit into the statewide system of capability classification, and not all of the capability units in the State are represented in this county.

Management by capability units[1]

All of the soils of Houston County are low in organic-matter content and in natural fertility and are medium acid to very strongly acid. Good management of crop residue, the use of sod crops in the cropping system, and the use of winter cover crops help to maintain the organic-matter content. Commercial fertilizer and lime should be applied according to the needs of the crop to be grown and in quantities indicated by the results of soil tests.

Soil blowing is a problem in large cultivated areas early in spring when the fields are almost bare, because plants are most susceptible to damage while they are still small. Grain crops or tall, close-growing crops planted at right angles to the prevailing winds reduce the hazard of soil blowing.

In the following pages the capability units in Houston County are described and suggestions for the use and management of the soils are given. The soils assigned to each unit can be identified by referring to the "Guide to Mapping Units" at the back of this report.

CAPABILITY UNIT I-11

This unit consists of deep, well-drained soils on uplands and stream terraces. The slope range is 0 to 2 percent. These soils have a surface layer of grayish-brown or reddish-brown fine sandy loam 6 to 10 inches thick. Their subsoil is friable or firm, yellowish-brown, yellowish-red, or red sandy clay loam to sandy clay. The soils in this unit make up about 3 percent of the county. (The Wickham soil in this unit is in group 31 in the statewide system of numbering capability units.)

These soils are moderately high in available water capacity. Infiltration is medium, and permeability is moderate. Tilth is good, and the soils can be worked throughout a wide range of moisture content.

These soils are well suited to all kinds of row crops commonly grown. Suitable forage plants include bahiagrass, bermudagrass, fescue, sericea lespedeza, crimson clover, and ball clover.

The soils in this unit are the most productive in the county. They can be cultivated intensively, and row crops can be grown year after year. After harvest, shredded crop residue should be left on the surface to protect the soil through the winter. Natural depressions should be seeded to perennial grasses, to provide water-disposal areas and to help control erosion. There are no serious limitations, and special management to maintain tilth and to control water is not needed.

CAPABILITY UNIT I-12

This unit consists of deep, well-drained soils on uplands and stream terraces. The slope range is 0 to 2 percent. These soils have a surface layer of gray, grayish-brown, brown, or reddish-brown, very friable

[1] O. D. Fincher, conservation agronomist, SCS, assisted with preparation of this section.

sandy loam, loamy sand, or fine sandy loam 7 to 17 inches thick. Their subsoil is yellowish-brown, yellowish-red, or red, friable sandy loam or sandy clay loam. The soils in this unit make up about 6 percent of the county.

These soils are low in available water capacity. Infiltration is medium or rapid, and permeability is moderate or rapid. Surface runoff is very slow, and the hazard of erosion, if any, is slight. Tilth is very good.

These soils are well suited to all kinds of row crops commonly grown. Suitable pasture plants are Coastal bermudagrass, bahiagrass, crimson clover, and ball clover.

The soils in this capability unit can be cultivated intensively. Row crops can be grown year after year. The response to fertilization is good. Crop residue (fig. 6) and green-manure crops should be turned under to help maintain the organic-matter content and to keep the soils in good tilth. Natural depressions should be seeded to perennial grasses, to help control erosion.

CAPABILITY UNIT IIe-11

This unit consists of deep, well-drained soils on uplands and stream terraces. The slope range is 2 to 5 percent. These soils have a surface layer of grayish-brown, yellowish-brown, or reddish-brown, very friable fine sandy loam 2 to 10 inches thick. Their subsoil is friable or firm, yellowish-brown, yellowish-red, or red sandy clay loam to sandy clay. The soils in this unit make up about 13 percent of the county. (The Wickham soil in this unit is in group 31 in the statewide system of numbering capability units.)

These soils are moderately high in available water capacity. Infiltration is medium, and permeability is moderate. Surface runoff is slow or medium, and the erosion hazard is moderate. Tilth is good.

These soils are suited to most kinds of crops commonly grown. The main crops are cotton, peanuts, corn, small grain, and truck crops. The main pasture and hay crops are Coastal bermudagrass, bahiagrass, tall fescue, white clover, ball clover, crimson clover, and sericea lespedeza.

An example of a suitable cropping system is 1 year of small grain followed by 1 year of a row crop. The soils can be protected against erosion by shredding crop residue, by planting winter cover crops, and by using close-growing crops in rotation with row crops. All tillage should be on the contour. Parallel terraces or parallel strips of sod are needed if row crops are grown. All natural depressions should be vegetated with perennial grasses.

***Figure 6.*—Peanut field after harvest. The residue left on the surface will be turned under to help maintain organic-matter content and to improve tilth. The soil is Dothan loamy sand, 0 to 2 percent slopes.**

CAPABILITY UNIT IIe-12

This unit consists of deep, well-drained soils on uplands and stream terraces. The slope range is 2 to 5 percent. These soils have a surface layer of gray, grayish-brown, brown, or reddish-brown, very friable loamy sand to fine sandy loam 5 to 17 inches thick. Their subsoil is yellowish-brown, yellowish-red, or red, friable sandy loam or sandy clay loam. The soils in this unit make up about 16 percent of the county.

These soils are low in available water capacity. Infiltration is medium or rapid, and permeability is moderate or rapid. Surface runoff is slow or medium, and the erosion hazard is slight or moderate. Tilth is very good.

These soils are well suited to cotton, peanuts, corn, small grain, and truck crops. The main pasture and hay crops are bahiagrass, ball clover (fig. 7), crimson clover, Coastal bermudagrass, and sericea lespedeza.

An example of a suitable cropping system is 1 year of small grain followed by 1 year of a row crop. Close-growing crops should be grown every other year, to help control erosion. After harvest, shredded crop residue should be left on the surface to protect the soil through the winter. Growing winter cover crops also helps protect the soils against erosion. All tillage should be on the contour. Terraces and vegetated waterways are needed.

CAPABILITY UNIT IIe-16

This unit consists of deep, moderately well drained and somewhat poorly drained soils on uplands and stream terraces. The slope range is 2 to 5 percent. These soils have a surface layer of gray to very dark gray, very friable sandy loam 6 to 10 inches thick. Their subsoil is yellow, yellowish-brown, reddish-brown, or yellowish-red, friable, very firm sandy loam to clay, mottled with gray in the lower part. The soils in this unit make up less than 1 percent of the county.

These soils are low in fertility, low to moderately high in available water capacity, and strongly acid. Infiltration is rapid, and permeability is moderate or slow. Surface runoff is slow or medium, and the erosion hazard is slight or moderate.

These soils are well suited to corn, peanuts, soybeans, small grain, and truck crops. Suitable plants for pasture and hay are bahiagrass, Coastal bermudagrass, ball clover, and crimson clover.

An example of a suitable cropping system is 1 year of small grain followed by 1 year of a row crop. Close-growing crops should be grown every other year to help control erosion. After harvest, shredded crop residue should be left on the surface to protect the soil through the winter. All tillage should be on the contour. Terraces and vegetated waterways are needed.

CAPABILITY UNIT IIw-11

This unit consists of well drained and moderately well drained soils on flood plains and in upland de-

Figure 7.—**Pasture of ball clover that has been reseeding naturally for 8 years. The pond provides recreation and furnishes water for livestock and for irrigation. The soil is Dothan loamy sand, 2 to 5 percent slopes.**

pressions. The slope range is 0 to 2 percent. These soils have a surface layer of brown to very dark grayish-brown loamy sand to silt loam and a subsoil of stratified sandy loam. The soils in this unit make up less than 1 percent of the county. They are subject to flooding or to ponding after rainfall.

These soils are moderately high in natural fertility and available water capacity. Infiltration is medium, and permeability is rapid. Tilth is good.

The soils in this unit are among the most productive in the county. They are well suited to corn, truck crops, and small grain. Row crops can be grown year after year if large amounts of organic matter are returned to the soil. Suitable plants for hay and pasture include bahiagrass, Coastal bermudagrass, tall fescue, white clover, ball clover, and crimson clover. In places shallow ditches are needed to drain the surface. Diversion terraces are needed in some areas to divert runoff from higher lying areas.

CAPABILITY UNIT IIw-17

This unit consists of deep, moderately well drained and somewhat poorly drained soils on uplands and stream terraces. The slope range is 0 to 2 percent. These soils have a surface layer of gray to very dark grayish-brown fine sandy loam 6 to 12 inches thick. Their subsoil is friable or firm, yellow to yellowish-red sandy loam to clay and is mottled with gray or brown. The soils in this unit make up about 3 percent of the county. Some of them are subject to flooding.

These soils are moderately high in available water capacity and are medium acid or strongly acid. Infiltration is rapid or medium, and permeability is moderate or slow. The organic-matter content is low. The water table is high in winter and early in spring.

These soils are well suited to corn, truck crops, and small grain. Bahiagrass, tall fescue, white clover, ball clover, and crimson clover are suitable pasture plants. If large amounts of organic matter are returned to the soils, row crops can be grown year after year. Shredded stalks should be left on the surface after harvest. Shallow ditches are needed in places to drain off surface water.

CAPABILITY UNIT IIs-12

This unit consists of deep, well-drained soils on uplands. The slope range is 0 to 5 percent. These soils have a thick surface layer of grayish-brown or yellowish-brown, very friable loamy sand. Their subsoil is yellowish-brown to red, friable sandy loam or sandy clay loam. The soils in this unit make up about 3 percent of the county.

These soils are low in fertility and in available water capacity and are strongly acid. The organic-matter content is low. Infiltration and permeability are rapid. Surface runoff is very slow to medium, and the erosion hazard is slight or moderate.

These soils produce good yields of peanuts, watermelons, peas, and other truck crops, if adequately fertilized. Suitable plants for pasture and hay are Coastal bermudagrass and bahiagrass.

Row crops can be grown on these soils year after year if crop residue is shredded and left on the surface. Better yields can be expected, however, if 2 years of row crops are followed by 3 years of sod crops. All

tillage should be on the contour. Fertilizer leaches out rapidly; consequently, split applications are advisable.

CAPABILITY UNIT IIIe-11

This unit consists of deep, well-drained soils on uplands. The slope range is 5 to 8 percent. These soils have a surface layer of brown, grayish-brown, yellowish-brown, or reddish-brown, friable fine sandy loam 2 to 6 inches thick. Their subsoil is yellowish-brown, yellowish-red, or red, friable or firm sandy clay loam to sandy clay. The soils in this unit make up about 1 percent of the county.

These soils are low to moderately high in available water capacity. Infiltration is medium, and permeability is moderate. Surface runoff is medium or rapid, and the erosion hazard is moderate or severe. Tilth is good.

These soils are suited to cotton, peanuts, corn, small grain, truck crops, and most other kinds of crops commonly grown in the county. Suitable plants for pasture and hay crops are Coastal bermudagrass, bahiagrass, ball clover, crimson clover, and sericea lespedeza.

An example of a suitable cropping system is 3 years of bahiagrass or Coastal bermudagrass followed by 2 years of row crops. Strips of perennial grass, established at regular intervals across the slope, make the cropping system more effective. After harvest, shredded crop residue should be left on the surface to protect the soils through the winter. Terraces and grassed waterways are essential if these soils are used for row crops. The waterways should be sodded before the terraces are constructed.

CAPABILITY UNIT IIIe-12

This unit consists of deep, well-drained soils on uplands. The slope range is 5 to 8 percent. These soils have a surface layer of gray, grayish-brown, brown, or reddish-brown, very friable sandy loam or loamy sand 2 to 6 inches thick. Their subsoil is yellowish-brown, yellowish-red, or red, friable or firm sandy loam or sandy clay loam. The soils in this unit make up about 3 percent of the county.

These soils are low in available water capacity. Infiltration is medium or rapid, and permeability is moderate or rapid. Surface runoff is medium or rapid, and the erosion hazard is moderate or high. Tilth is good.

These soils are fairly well suited to the kinds of row crops commonly grown in the county. Suitable plants for pasture and hay crops are Coastal bermudagrass, bahiagrass, crimson clover, ball clover, and sericea lespedeza. Yields are good if moisture is conserved and erosion is carefully controlled.

An example of a suitable cropping system is 3 years of perennial grass followed by 2 years of row crops. After harvest, large amounts of organic matter, such as shredded stalks, should be returned to the soil to help control erosion. All tillage should be on the contour. Terraces and grassed waterways are needed if these soils are used for row crops. The waterways should be sodded before the terraces are constructed.

CAPABILITY UNIT IIIe-19

This unit consists of deep, well-drained soils on uplands. The slope range is 2 to 5 percent. These soils have a surface layer of yellowish-brown to dark-gray fine sandy loam or loamy sand 2 to 7 inches thick. Their subsoil is yellowish-brown to red, friable or firm sandy loam to sandy clay. At a depth of 12 to 40 inches is a compact layer of mottled yellow, brown, or red material. In some places there are many iron concretions on the surface and in the subsoil. The soils in this unit make up about 1 percent of the county.

These soils are low in available water capacity. They are low in fertility and are medium acid or strongly acid. Their organic-matter content is low.

These soils are not suitable for cultivation year after year. Yields of row crops and forage crops are only fair. Bahiagrass and Coastal bermudagrass are better suited than other kinds of forage plants.

If row crops are grown, an example of a suitable cropping system is 4 or 5 years of sod crops followed by 1 year of row crops or small grain. After harvest, stalks should be shredded and left on the surface, to help control erosion. All tillage should be on the contour. Terraces should be constructed to reduce runoff and help control erosion. All natural depressions should be seeded to perennial grasses, such as Coastal bermudagrass or bahiagrass.

CAPABILITY UNIT IIIw-11

This unit consists of deep, poorly drained and somewhat poorly drained soils on upland flats, in upland depressions, and on flood plains of small streams. These soils have a surface layer of gray, friable sandy loam to silt loam. Their subsoil is gray, friable or firm sandy loam to clay mottled with yellow and brown. These soils are ponded (fig. 8) most of each winter and for several days after rainfall in summer. They make up about 4 percent of the county.

These soils are low to moderate in fertility and moderately high or high in available water capacity. They are medium acid to strongly acid. Wetness is the major limitation.

If properly drained, these soils are productive. Soybeans, corn, and small grain are suitable cultivated crops. Suitable pasture plants are bahiagrass, dallisgrass, tall fescue, and white clover.

An example of a suitable cropping system is 1 year of small grain followed by 2 years of row crops. If large amounts of organic matter are added, row crops can be grown year after year.

CAPABILITY UNIT IIIw-14

This unit consists of Ocilla loamy fine sand, 0 to 2 percent slopes, a deep, somewhat poorly drained soil on uplands. This soil has a surface layer of grayish-brown to very dark gray loamy fine sand and a subsoil of olive-yellow to yellowish-brown, very friable loamy sand mottled with gray at a depth of 12 to 25 inches. It makes up less than 1 percent of the county.

This soil is low in fertility and in available water capacity. It is medium acid or strongly acid. Infiltration and permeability are rapid. The organic-matter content is low. The water table is high in winter and early in spring.

This soil is low in productivity. If drainage is improved and large amounts of organic matter are re turned, fair yields can be expected. Corn, grain sor-

Figure 8.—Ponded water on Grady soils. This area needs surface drainage. Ponding is more extensive during rainy seasons.

ghum, soybeans, truck crops, and small grain are suitable crops. Suitable forage plants are bahiagrass, Coastal bermudagrass, white clover, ball clover, and crimson clover.

An example of a suitable cropping system is 1 year of close-growing crops followed by 2 years of row crops. If large amounts of organic matter are added, row crops can be grown year after year.

CAPABILITY UNIT IIIs-11

This unit consists of deep, excessively drained to somewhat poorly drained soils on flood plains, terraces, and uplands. The slope range is 0 to 5 percent. These soils have a surface layer of gray, grayish-brown, or reddish-brown, very friable or loose loamy sand or loamy fine sand. Their subsoil is yellowish-brown, yellowish-red, or red loamy sand to sandy clay. The soils in this unit make up about 13 percent of the county. Some of them are subject to flooding.

These soils are seasonally low in available water capacity. Infiltration is rapid, and permeability is rapid or very rapid. Surface runoff is very slow or slow. The hazard of water erosion, if any, is slight, but soil blowing is a threat in large fields. Tilth is good.

These soils are fairly well suited to peanuts, watermelons, peas, and other truck crops. Coastal bermudagrass and bahiagrass are suitable pasture plants. If large amounts of organic matter and fertilizer are applied, yields are good, but fertilizer leaches out quickly.

An example of a suitable cropping system is 2 years of small grain followed by 1 year of row crops. A better cropping system is 3 or more years of bahiagrass or Coastal bermudagrass followed by 2 years of row crops. Wind erosion in large fields can be minimized by tilling on the contour, by alternating strips of small grain with strips of clean-tilled crops, and by leaving shredded crop residue on the surface through the winter. Terracing is not practical.

CAPABILITY UNIT IIIs-17

This unit consists of deep, well-drained soils on uplands. The slope range is 5 to 8 percent. These soils have a thick surface layer of dark grayish-brown to brown, very friable loamy sand. Their subsoil is yellowish-brown to red, friable sandy loam or sandy clay loam. The soils in this unit make up less than 1 percent of the county.

These soils are low in fertility and in available water capacity and are medium acid or very strongly acid. Their organic-matter content is low. Infiltration and permeability are rapid. Surface runoff is medium, and the erosion hazard is moderate.

These soils are fairly well suited to the kinds of row crops commonly grown in the county. Suitable pasture plants are Coastal bermudagrass, bahiagrass, ball clover, and crimson clover. Yields are fair if moisture is conserved and erosion is controlled. Fertilizer leaches out rapidly.

An example of a suitable cropping system is 3 years of perennial sod crops followed by 2 years of row crops or small grain. Adding large amounts of organic matter reduces the erosion hazard. After harvest, stalks should be shredded and left on the surface. All tillage should be on the contour. Terraces and grassed waterways are needed if cultivated crops are grown. The waterways should be sodded before the terraces are constructed.

CAPABILITY UNIT IVe-19

This unit consists of deep, well-drained soils on uplands. The slope range is 5 to 12 percent. These soils have a surface layer of gray to brown, friable fine sandy loam to loamy sand. Their subsoil is yellow to red, friable or firm sandy loam to sandy clay. Very firm, mottled, compacted sandy clay loam to sandy clay begins at a depth of 20 to 30 inches. The soils in this unit make up about 4 percent of the county.

These soils are low in fertility and in available water capacity and are medium acid to very strongly acid. Infiltration is rapid or medium, and permeability is slow or moderate. The erosion hazard is moderate or severe.

These soils are not suited to cultivated crops year after year. Bahiagrass and sericea lespedeza are suitable forage crops. Yields are low.

An example of a suitable cropping system is 5 years of sod crops followed by 1 year of a row crop and 1 year of small grain. Tillage should be on the contour. Terraces and waterways are needed. If the soils are not terraced, contour strips of perennial sod should be used. Crop residue should be returned to the soil.

CAPABILITY UNIT IVw-11

This unit consists of deep, poorly drained and somewhat poorly drained, nearly level soils on first bottoms, stream terraces, and uplands. These soils have a surface layer ranging from dark grayish brown to very dark gray in color and from sand to silt loam in texture. Their subsoil is gray sandy loam to clay mottled with yellow or brown. The soils in this unit make up about 13 percent of the county. The Bladen soils in this unit have a sticky and plastic subsoil. The Mantachie and Bibb soils in this unit are subject to frequent overflow.

These soils are very low to moderately high in available water capacity. Infiltration and permeability are slow or moderate. The water table is high.

If these soils are properly drained, they are productive. They are suited to soybeans, truck crops, and grain sorghum for silage. Suitable pasture plants are bahiagrass, dallisgrass, white clover, and ball clover. If large amounts of organic matter are added, row crops can be grown year after year.

CAPABILITY UNIT IVs-11

This unit consists of deep, well-drained or excessively drained soils on uplands. The slope range is 2 to 12 percent. These soils have a surface layer of gray, grayish-brown, or reddish-brown loamy sand. Their subsoil is very friable, yellowish-brown, yellowish-red, or red loamy sand, or firm or very firm sandy clay loam to clay. The soils in this unit make up about 4 percent of the county.

These soils are very low in available water capacity. Infiltration is slow to rapid. Permeability in the subsoil is rapid or very rapid where the texture of the subsoil is loamy sand; it is slow or very slow where the texture is clay loam to clay. Surface runoff is slow to rapid, and the erosion hazard is slight to severe. Tilth is good. Droughtiness is the major limitation.

These soils are generally low in productivity. They are highly susceptible to leaching, and frequent applications of fertilizer are needed. Most areas are not suited to row crops, but yields of peanuts and watermelons are fair. Coastal bermudagrass and bahiagrass are suitable pasture plants. If row crops are grown, additions of organic matter are needed. An example of a suitable cropping system is 5 years of perennial grasses followed by 1 or 2 years of crops. Planting the crops in field strips will make the cropping system more effective. Tillage should be on the contour. Terracing is not practical.

CAPABILITY UNIT Vw-11

This unit consists of Plummer loamy sand, a coarse-textured and poorly drained soil on upland flats. This soil has a surface layer of dark-colored loamy sand. Its subsoil of gray loamy sand overlies finer textured material. This unit makes up less than 1 percent of the county.

This soil is low in available water capacity. Infiltration is rapid, and permeability is rapid in the uppermost 40 to 60 inches. Surface runoff is very slow or slow, and the erosion hazard is slight. The water table is high most of the year.

The soil in this capability unit is not suited to row crops. If drained, it is suitable for bahiagrass and white clover.

CAPABILITY UNIT VIe-19

This unit consists of well-drained soils on uplands. The slope range is 5 to 12 percent. Shallow gullies are common, and there are a few deep ones. These soils have a surface layer of friable or firm, yellowish-brown, yellowish-red, or gray sandy loam, fine sandy loam, sandy clay loam, or loamy sand. Their subsoil is firm or very firm, yellow, yellowish-brown, yellowish-red, or red sandy clay loam to clay mottled with red and gray in the lower part. The soils in this unit make up about 4 percent of the county.

These soils are low in fertility and in available water capacity and are medium acid or strongly acid. The organic-matter content is low. Infiltration is slow to rapid, and permeability is slow or very slow. Surface runoff is medium or rapid, and the erosion hazard is severe.

These soils are not suited to row crops, but they can be used for woodland. Some areas are used for pasture. Bahiagrass can be grown, but yields are usually poor.

CAPABILITY UNIT VIs-11

This unit consists of deep, well-drained to somewhat excessively drained soils on uplands. The slope range is 8 to 17 percent. These soils have a surface layer of gray, grayish-brown, or reddish-brown, friable loamy sand. Their subsoil is friable or very friable, yellowish-brown, yellowish-red, or red loamy sand or firm or very firm, yellowish-brown sandy loam to clay. The soils in this unit make up about 1 percent of the county.

These soils are very low in available water capacity. Infiltration is rapid. Permeability is rapid or very rapid in areas where the subsoil is loamy sand; it is slow or very slow where the subsoil is finer textured. Surface runoff is medium or rapid, and the erosion hazard is moderate.

These soils are highly susceptible to leaching and need frequent applications of fertilizer. Bahiagrass and Coastal bermudagrass can be grown, but yields are only fair. Pine will grow on these soils if scrub oak is controlled.

CAPABILITY UNIT VIIe-11

This unit consists of deep, well-drained soils on uplands. The slope range is 12 to 17 percent. These soils have a surface layer of gray to brown loamy sand and a subsoil of yellowish brown to strong brown. This unit makes up less than 1 percent of the county.

These soils are low in fertility and in available water capacity. Their organic-matter content is low. Infiltration and permeability are rapid in the Alaga soils, but slow in the Esto soils. Surface runoff is rapid on the Esto soils, and the erosion hazard is severe.

These soils are droughty and highly susceptible to leaching. They are not suited to row crops but can be used for woodland. Bahiagrass and Coastal bermudagrass can be grown, but yields are usually low.

CAPABILITY UNIT VIIe-19

This unit consists of well-drained soils on uplands, and areas of Gullied land and of Rough broken and stony

land. Some of the soils are severely eroded. Shallow gullies are common, and deep, caving-type gullies occur in places. Some areas are so stony that use of machinery is limited. The slope range is 5 to 17 percent. The soils in this unit have a surface layer of friable or firm, yellowish-brown, yellowish-red, or gray loamy sand, sandy loam, or sandy clay loam. Their subsoil is firm or very firm, yellow, yellowish-red, yellowish-brown, or red sandy loam to clay. The lower part of the subsoil is mottled. This unit makes up about 3 percent of the county.

The soils in this unit are low in fertility and in available water capacity. Infiltration and permeability are slow or moderate. Surface runoff is rapid, and the erosion hazard is severe.

These soils are too droughty and too eroded to be used for crops, hay, or pasture. Their root zone is shallow. They are suited to loblolly and slash pine, but plantings should be protected from fire and from grazing. These areas can be developed as wildlife habitats. Large amounts of a complete fertilizer should be added to increase the productivity of the soils. Strips of bicolor lespedeza can be planted in open areas to attract quail. Bahiagrass can be planted to attract deer and turkey.

CAPABILITY UNIT VIIw-11

This unit consists of areas of Swamp in large upland depressions and on the first bottoms of the larger streams in the county. The soils vary in texture and thickness. They are under shallow water most of the year. This unit occupies about 1 percent of the county.

Swamp is not suited to crops or pasture without major reclamation. Gum, cypress, and other water-tolerant trees are grown for use as veneer, pulpwood, sawtimber, and fenceposts.

Predicted Yields

Table 2 lists for each soil the predicted average yields per acre of the principal crops grown in Houston County, under two levels of management. The figures in columns A represent yields that can be expected under common management. Those in columns B represent yields that can be expected under improved management.

Common management is assumed to include the following:

1. The amount of fertilizer used is normally not sufficient to produce favorable yields.
2. Lime is seldom used, and green-manure crops are seldom turned under.
3. Row crops are grown year after year for long periods of time.
4. Runoff and erosion are not controlled.
5. Improved crop varieties and certified seed are not always used.
6. Overgrazing is common.
7. Weeds, insects, and disease are not adequately controlled.

Improved management is assumed to include the following:

1. Fertilizer, manure, and lime are applied according to the needs indicated by soil tests.
2. Cropping systems suggested in the section on capability units are followed.
3. Water is disposed of by means of terraces and grassed waterways or by field borders, contour cultivation, and artificial drainage.
4. Seedbeds are well prepared and properly seeded.
5. Good crop varieties and seeding mixtures are used at proper planting rates.
6. Grazing is regulated.
7. Disease, insects, and undesirable plants are controlled.

Woodland [2]

Before Houston County was settled it was entirely wooded. About 38 percent of the acreage is still wooded, and most of the woodland is owned and managed by farmers. About half of the timber is softwood, principally pine, and half is hardwood. The major forest types are longleaf-slash pine, loblolly-shortleaf pine, and oak-gum-cypress. Small areas of oak-pine and oak-hickory are scattered throughout the county. On the upland soils, the principal commercial species are loblolly, slash, shortleaf, and longleaf pines. On the somewhat poorly drained bottom lands, the principal commercial species are pine, gum, oak, yellow-poplar, and cottonwood. On the poorly drained bottom lands, the principal commercial species are gum and cypress. Most of the pulpwood and sawtimber cut is pine. Slash pine and longleaf pine are sources of naval stores (turpentine, resins, and other byproducts). The county has good markets for pulpwood and sawtimber.

Woodland groups

The soils of Houston County have been placed in 10 woodland groups on the basis of suitability for wood crops. Each group consists of soils that are about the same in potential productivity, in limitations, and in management needs. The numbering system used for the groups does not indicate relative productivity. The soils in group 6, for example, are more productive than those in group 1.

The potential annual yields given in the descriptions of the woodland groups represent average yearly growth per acre, to age 60, measured by the Scribner rule. These estimates are from U.S.D.A. Miscellaneous Publication No. 50, "Volume, Yield, and Stand Tables for Second-Growth Southern Pines." Table 3 summarizes data concerning the average yearly growth of four commonly grown species of pine.

Preceding the descriptions of the groups is a brief discussion of the terms used in interpreting the capabilities of the soils for production of trees. The soils assigned to each woodland group can be identified by referring to the "Guide to Mapping Units."

Plant competition refers to the rate of invasion by unwanted trees, shrubs, and vines when openings are made in the canopy. Competition is slight if it does not prevent adequate natural regeneration and early growth, or if it does not interfere significantly with development of planted seedlings. Competition is moderate if it

[2] W. C. AIKEN, woodland conservationist, SCS, assisted with preparation of this section.

delays the establishment and slows the growth of seedlings but does not prevent the eventual development of a fully stocked stand. Competition is severe if it prevents adequate restocking, either natural or artificial, without intensive preparation of the site and without special maintenance practices, including weeding.

Seedling mortality refers to the expected loss of seedlings as a result of unfavorable soil characteristics or topographic features, not as a result of plant competition. Even if healthy seedlings of suitable species are planted correctly or occur naturally in adequate numbers, some will not survive if conditions are unfavorable. Mortality is slight if less than 25 percent of the seedlings die; moderate if 25 to 50 percent die; and severe if more than 50 percent die.

Equipment limitations result from soil characteristics and topographic features that restrict or prevent the use of conventional equipment for planting and harvesting wood crops, for constructing roads, for controlling unwanted vegetation, and for controlling fires. The limitation is slight if there is little or no restriction on the type of equipment that can be used or on the time of year that equipment can be used. It is moderate if the use of equipment is restricted by one or more unfavorable characteristics, such as slope, stones or other obstructions, seasonal wetness, instability, or risk of injury to roots of trees. The limitation is severe if special equipment is needed and if the use of such equipment is severely restricted by one or more unfavorable soil characteristics.

Windthrow hazard refers to soil characteristics that affect the development of tree roots and the firmness with which the roots anchor the tree in the soil. In this county windthrow is a hazard only on soils having a high water table or restrictive layers that prevent adequate root penetration. The hazard is slight if the trees are firmly rooted and will not fall over in a normal wind. It is moderate if roots develop enough to hold the trees firmly except when the soil is excessively wet and the wind is strong. It is severe if individual trees are likely to blow over unless protected on all sides by other trees.

Erosion hazard refers to the relative severity of erosion to be expected if a soil is not protected by special practices. It is related to slope, depth, permeability, and other characteristics of the soil, and to plant cover. The erosion hazard is slight if only a small loss of soil is to be expected. It is moderate if a moderate loss of soil can be expected unless special care is taken in locating logging roads and skid trails. It is severe if a serious loss of soil can be expected in areas where the ground cover is inadequate or has been disturbed by logging or other operations.

WOODLAND GROUP C–1

This group consists of deep, well-drained and somewhat excessively drained soils that have a surface layer and subsoil of highly permeable loamy sand. The slope range is 0 to 17 percent. The available moisture capacity is low. Roots and water penetrate easily to considerable depth.

These soils are moderately productive. They are well suited to loblolly, slash, shortleaf, and longleaf pine. Loblolly pine and slash pine are the predominant species and should be favored in planting. They can be expected to grow 80 feet in 50 years. Shortleaf and longleaf pine grow about 60 feet in 50 years. Longleaf pine occupies considerable acreage in the higher and drier areas. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—440, slash—390, shortleaf—260, and longleaf—160.

Plant competition is slight. Vegetation competing with pine can be controlled by burning or by the use of chemicals. In some areas vegetation suitable for wildlife habitats and recreation sites should be left undisturbed.

Seedling mortality is moderate. The amount of moisture available to plants is often insufficient for satisfactory germination of seeds or for support of the young plants, and, consequently, replanting is sometimes necessary. Site preparation is desirable.

Equipment limitations are slight. Access is usually unhampered, and conventional equipment can be used.

The erosion hazard is slight or moderate. If the slope is less than 5 percent, few precautions are needed to control erosion. If the slope is more than 5 percent, logging roads and skid trails should follow the contour, so that they will not start gullies.

WOODLAND GROUP C–2

This group consists of deep, poorly drained, level soils that have a surface layer of very dark gray loamy sand to silt loam and a subsoil of gray, mottled loamy sand to slowly permeable, plastic, sticky clay. The available moisture capacity is moderately high.

Some areas are so wet and have such a high water table that desirable trees cannot be established without draining the soils. Otherwise, these soils are highly productive. Hardwoods are predominant, but some areas support considerable pine and cypress. Loblolly, slash, and spruce pine grow in the better drained areas. Loblolly pine, slash pine, and sweetgum should be favored in planting. Loblolly and slash pine can be expected to grow 90 feet in 50 years. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—550, and slash—490.

Plant competition is severe. The amount of moisture available to plants and the natural fertility of the soils are favorable to the growth of vegetation, and invasion by undesirable plants is very rapid when openings are made in the canopy. Control burning is not advisable in areas that have been clear cut, because desirable hardwoods would be destroyed. Bulldozing, clear cutting, and chemical spraying are satisfactory methods of controlling competing vegetation.

Seedling mortality is slight. If competing vegetation is controlled and surface drainage is good, little or no loss can be expected.

Equipment limitations are severe. Drainage is poor in most areas, and equipment suitable for use on wet land is necessary. During several months of the year, wood crops cannot be harvested, and some root damage must be expected if heavy machinery is used.

Windthrow is a moderate hazard because the water table is consistently high and root systems tend to be shallow and flat. Tall trees should not be left unprotected by surrounding trees.

TABLE 2.—*Predicted average yields per acre of*

[Figures in columns A represent yields obtained under common management; those in columns B, yields that

Symbol	Soil	Peanuts		Cotton		Corn	
		A	B	A	B	A	B
		Lb.	*Lb.*	*Lb. of lint*	*Lb. of lint*	*Bu.*	*Bu.*
AaB	Alaga loamy sand, 0 to 5 percent slopes	900	1, 790	200	400	20	35
AaC	Alaga loamy sand, 5 to 8 percent slopes	750	1, 500	175	310	14	30
AaD	Alaga loamy sand, 8 to 12 percent slopes	—	—	—	—	—	—
AeE2	Alaga and Esto soils, 12 to 17 percent slopes, eroded:						
	Alaga soils	—	—	—	—	—	—
	Esto soils	—	—	—	—	—	—
AmB	Americus loamy sand, 2 to 5 percent slopes	910	1, 800	175	360	15	30
AmD	Americus loamy sand, 5 to 12 percent slopes	750	1, 500	150	300	12	25
ArA	Ardilla fine sandy loam, 0 to 2 percent slopes	—	—	—	—	40	65
Bb	Bibb and Bladen soils:						
	Bibb soils	—	—	—	—	—	—
	Bladen soils	—	—	—	—	—	—
Bs	Bibb soils and sandy alluvium:						
	Bibb soils	—	—	—	—	—	—
	Sandy alluvium	[2]	[2]	[2]	[2]	[2]	[2]
Bt	Bladen silt loam	—	—	—	—	—	—
Bu	Buncombe loamy sand	—	—	—	—	—	—
CaB2	Carnegie fine sandy loam, 2 to 5 percent slopes, eroded	1, 130	1, 590	500	740	30	55
CaC2	Carnegie fine sandy loam, 5 to 8 percent slopes, eroded	1, 000	1, 470	330	500	28	45
CsB2	Carnegie-Sunsweet complex, 2 to 5 percent slopes, eroded:						
	Carnegie soils	1, 130	1, 590	500	740	30	55
	Sunsweet soils	900	1, 800	300	500	25	40
CsC2	Carnegie-Sunsweet complex, 5 to 8 percent slopes, eroded:						
	Carnegie soils	1, 000	1, 470	330	500	28	45
	Sunsweet soils	—	—	200	350	20	37
CsC3	Carnegie-Sunsweet complex, 5 to 8 percent slopes, severely eroded:						
	Carnegie soils	—	—	200	340	17	35
	Sunsweet soils	—	—	—	—	—	—
CsD2	Carnegie-Sunsweet complex, 8 to 12 percent slopes, eroded:						
	Carnegie soils	—	—	200	350	20	37
	Sunsweet soils	—	—	—	—	—	—
CtD	Carnegie-Sunsweet-stony land complex, 5 to 12 percent slopes:						
	Carnegie soils	—	—	200	345	19	36
	Sunsweet soils	—	—	—	—	—	—
	Stony land	—	—	—	—	—	—
CoB2	Cowarts fine sandy loam, 2 to 5 percent slopes, eroded	830	1, 134	250	400	24	40
CoC2	Cowarts fine sandy loam, 5 to 8 percent slopes, eroded	800	1, 100	200	350	20	37
CoC3	Cowarts fine sandy loam, 5 to 8 percent slopes, severely eroded.	—	—	200	340	17	35
CoD2	Cowarts fine sandy loam, 8 to 12 percent slopes, eroded	—	—	200	350	20	37
DoA	Dothan loamy sand, 0 to 2 percent slopes	1, 400	2, 000	425	660	40	65
DoB	Dothan loamy sand, 2 to 5 percent slopes	1, 100	1, 850	415	650	30	50
DoB2	Dothan loamy sand, 2 to 5 percent slopes, eroded	950	1, 400	415	650	26	45
DoC2	Dothan loamy sand, 5 to 8 percent slopes, eroded	920	1, 368	350	500	24	41
DuA	Dunbar fine sandy loam, 0 to 2 percent slopes	—	—	—	—	40	65
DuB	Dunbar fine sandy loam, 2 to 5 percent slopes	—	—	300	500	40	65
DvA	Dunbar fine sandy loam, overflow, 0 to 2 percent slopes.	—	—	—	—	—	—
EsB	Esto loamy sand, 2 to 5 percent slopes	900	1, 800	300	500	25	40
EsB2	Esto loamy sand, 2 to 5 percent slopes, eroded	800	1, 600	260	450	23	36
EsC2	Esto loamy sand, 5 to 8 percent slopes, eroded	600	1, 500	240	420	20	34
EtD3	Esto soils, 8 to 12 percent slopes, severely eroded	—	—	—	—	—	—
FaA	Faceville fine sandy loam, 0 to 2 percent slopes	1, 300	1, 940	535	785	45	72
FaB2	Faceville fine sandy loam, 2 to 5 percent slopes, eroded	1, 225	1, 690	500	755	38	65
FlA	Flint fine sandy loam, 0 to 2 percent slopes	800	1, 500	350	550	35	60
FlB	Flint fine sandy loam, 2 to 5 percent slopes	1, 000	1, 600	350	550	33	51
Gd	Grady soils	—	—	—	—	—	—
GfA	Grangeburg fine sandy loam, 0 to 2 percent slopes	1, 100	1, 640	250	540	45	73
GfB	Grangeburg fine sandy loam, 2 to 5 percent slopes	1, 130	1, 700	350	500	36	61
GrA	Greenville fine sandy loam, 0 to 2 percent slopes	1, 350	1, 930	550	800	40	67
GrB2	Greenville fine sandy loam, 2 to 5 percent slopes, eroded.	1, 300	1, 800	520	770	33	54

principal crops under two levels of management

can be expected under highest feasible management. Dashed lines indicate the crop is not commonly grown]

Oats		Coastal bermudagrass for hay		Bahiagrass for pasture		Field peas		Tomatoes		Melons	
A	B	A	B	A	B	A	B	A	B	A	B
Bu.	*Bu.*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*
25	45	1.4	2.5	77	119	110	150	70	140	3.5	7.0
20	33	1.1	1.9	60	100	105	140	----	----	2.5	5.5
17	30	1.1	1.9	60	100	90	125	----	----	----	----
----	----	----	----	60	100	----	----	----	----	----	----
----	----	----	----	40	70	----	----	----	----	----	----
25	45	1.3	2.3	75	117	100	140	----	----	3.0	7.0
20	33	1.1	1.9	60	100	100	140	----	----	2.5	4.5
40	65	2.5	3.8	110	180	----	----	----	----	----	----
----	----	----	----	80	120	----	----	----	----	----	----
----	----	----	----	90	140	----	----	----	----	----	----
----	----	----	----	80	120	----	----	----	----	----	----
(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
----	----	----	----	90	140	----	----	----	----	----	----
----	----	----	----	60	98	----	----	----	----	----	----
37	58	3.5	4.9	101	169	140	190	90	160	5.0	8.5
34	52	3.0	4.4	80	150	137	186	90	150	4.0	7.0
37	58	3.5	4.9	101	169	140	190	90	160	5.0	8.5
30	55	2.0	3.3	85	130	110	150	----	----	3.5	6.0
34	52	3.0	4.4	80	150	137	186	90	150	4.0	7.0
20	38	1.5	2.3	60	110	105	140	----	----	----	----
19	37	1.4	2.2	55	105	95	125	----	----	----	----
----	----	----	----	40	60	----	----	----	----	----	----
20	38	1.5	2.3	57	107	97	135	----	----	----	----
----	----	----	----	40	60	----	----	----	----	----	----
19	37	1.4	2.2	56	106	96	130	----	----	----	----
----	----	----	----	40	60	----	----	----	----	----	----
----	----	----	----	35	55	----	----	----	----	----	----
25	40	1.7	2.6	70	120	110	150	90	160	----	----
20	38	1.5	2.3	60	110	105	140	80	150	----	----
19	37	1.4	2.2	55	105	95	125	----	----	----	----
20	38	1.5	2.3	57	107	97	135	----	----	----	----
35	60	3.5	4.8	110	180	160	200	100	170	5.5	9.0
30	45	2.8	3.7	80	130	140	190	85	165	5.5	9.0
27	42	2.6	3.5	75	125	135	185	90	160	5.0	8.5
25	40	1.7	2.6	70	120	132	180	80	145	4.0	7.0
40	65	2.5	3.8	110	180	----	----	----	----	----	----
40	65	2.5	3.5	110	180	----	----	----	----	----	----
----	----	----	----	90	138	----	----	----	----	----	----
30	55	2.0	3.3	85	130	110	150	----	----	3.5	6.0
27	50	1.6	2.8	80	120	105	145	----	----	----	----
24	42	1.4	2.0	70	115	95	120	----	----	----	----
----	----	----	----	40	70	----	----	----	----	----	----
50	70	4.2	5.7	125	200	140	190	120	190	6.5	10.0
38	67	3.6	5.4	110	185	135	185	115	180	6.0	9.5
32	61	2.9	4.0	110	180	----	----	----	----	----	----
32	60	3.0	4.1	95	144	----	----	----	----	----	----
----	----	----	----	82	135	----	----	----	----	----	----
40	65	3.0	4.2	130	198	----	----	----	----	3.5	6.0
40	55	3.5	4.9	115	180	160	130	90	130	4.0	6.5
50	70	4.0	5.5	120	195	150	190	130	200	6.5	10.0
40	62	3.7	5.2	112	187	145	185	125	190	6.0	9.5

TABLE 2.—*Predicted average yields per acre of principal*

Symbol	Soil	Peanuts A	Peanuts B	Cotton A	Cotton B	Corn A	Corn B
		Lb.	*Lb.*	*Lb. of lint*	*Lb. of lint*	*Bu.*	*Bu.*
GrC2	Greenville fine sandy loam, 5 to 8 percent slopes, eroded.	1, 100	1, 530	400	600	30	50
Gu	Gullied land	------	------	------	------	------	------
Iu	Iuka soils, local alluvium	1, 300	1, 800	400	600	50	84
LuA	Lucy loamy sand, 0 to 2 percent slopes	1, 350	2, 000	350	500	35	54
LuB	Lucy loamy sand, 2 to 5 percent slopes	1, 345	1, 990	340	490	33	51
LuC	Lucy loamy sand, 5 to 8 percent slopes	1, 100	1, 530	275	400	30	48
LuE	Lucy loamy sand, 8 to 17 percent slopes	------	------	------	------	------	------
Ma	Mantachie soils	------	------	------	------	------	------
Mn	Mantachie soils, local alluvium	------	------	------	------	------	------
MxA	Maxton fine sandy loam, 0 to 2 percent slopes	1, 400	2, 000	415	585	40	65
MxB	Maxton fine sandy loam, 2 to 5 percent slopes	1, 260	1, 800	405	575	33	55
Oc	Ochlockonee soils	1, 300	1, 800	300	500	50	84
OfA	Ocilla loamy fine sand, 0 to 2 percent slopes	800	1, 500	------	------	25	45
OfB	Ocilla loamy fine sand, 2 to 5 percent slopes	900	1, 600	220	400	22	37
OrA	Orangeburg sandy loam, 0 to 2 percent slopes	1, 400	1, 990	435	685	40	65
OrB2	Orangeburg sandy loam, 2 to 5 percent slopes, eroded	1, 300	1, 900	425	675	35	58
OrC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	1, 200	1, 690	325	470	25	47
Pa	Pansey fine sandy loam	------	------	------	------	------	------
Pe	Pelham sand	------	------	------	------	20	40
Pm	Plummer loamy sand	------	------	------	------	------	------
RbA	Red Bay sandy loam, 0 to 2 percent slopes	1, 400	1, 920	450	700	39	64
RbB2	Red Bay sandy loam, 2 to 5 percent slopes, eroded	1, 345	1, 945	440	690	34	54
RbC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	1, 195	1, 685	320	465	24	46
RbD2	Red Bay sandy loam, 8 to 12 percent slopes, eroded	1, 080	1, 500	250	450	18	35
Ro	Rough broken and stony land	------	------	------	------	------	------
TfA	Tifton fine sandy loam, 0 to 2 percent slopes	1, 275	1, 960	535	785	45	80
TfB2	Tifton fine sandy loam, 2 to 5 percent slopes, eroded	1, 225	1, 710	500	755	39	73
TfC2	Tifton fine sandy loam, 5 to 8 percent slopes, eroded	1, 095	1, 525	390	590	26	47
TrB	Troup loamy sand, 0 to 5 percent slopes	900	1, 790	210	390	20	35
VaA	Varina fine sandy loam, 0 to 2 percent slopes	1, 275	1, 950	552	760	45	80
VaB2	Varina fine sandy loam, 2 to 5 percent slopes, eroded	1, 225	1, 710	500	740	40	74
WaA	Wagram loamy sand, 0 to 2 percent slopes	1, 350	2, 000	350	500	35	54
WaB	Wagram loamy sand, 2 to 5 percent slopes	1, 345	1, 990	340	490	33	51
WaC	Wagram loamy sand, 5 to 8 percent slopes	1, 100	1, 530	275	400	30	48
WcA	Wickham fine sandy loam, 0 to 2 percent slopes	1, 400	2, 000	415	585	40	65
WcB	Wickham fine sandy loam, 2 to 5 percent slopes	1, 370	1, 970	400	560	37	62
WeB	Wicksburg-Esto complex, 2 to 5 percent slopes:						
	Wicksburg soils	900	1, 790	200	400	20	35
	Esto soils	900	1, 800	300	500	25	40
WeC2	Wicksburg-Esto complex, 5 to 8 percent slopes, eroded:						
	Wicksburg soils	750	1, 500	175	310	14	30
	Esto soils	600	1, 500	240	420	20	34
WeD2	Wicksburg-Esto complex, 8 to 12 percent slopes, eroded:						
	Wicksburg soils	------	------	------	------	------	------
	Esto soils	------	------	------	------	------	------

[1] Cow-acre-days is a term used to express the carrying capacity of pasture. It is the number of animal units carried per acre multiplied by the number of days the pasture is grazed during a single grazing season without injury to the sod. An acre of pasture that provides 30 days of grazing for two cows has a carrying capacity of 60 cow-acre-days.

WOODLAND GROUP C-3

This group consists of moderately deep and deep, well drained and moderately well drained soils on stream terraces and uplands. These soils have a friable surface layer and a friable or firm subsoil. The slope range is 0 to 17 percent. The available moisture capacity is low to moderately high.

These soils are moderately productive and are well suited to pine. Large areas support pure stands of loblolly pine (fig. 9) and slash pine, and these species should be favored in planting. Loblolly and slash pine can be expected to grow about 85 feet in 50 years. Sweetgum, cottonwood, and yellow-poplar can be grown on the less eroded, more fertile and moist areas. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—500, and slash—440.

Plant competition is moderate when openings are made in the canopy. Control burning, land clearing, and spraying with herbicides are satisfactory methods of controlling unwanted vegetation.

Seedling mortality is slight.

Equipment limitations are slight. In most areas the slope is less than 8 percent, and conventional equipment can be used. In areas where the slope is more than 8 percent, logging roads should follow the contour, and

crops under two levels of management—Continued

Oats		Coastal bermudagrass for hay		Bahiagrass for pasture		Field peas		Tomatoes		Melons	
A	B	A	B	A	B	A	B	A	B	A	B
Bu.	*Bu.*	*Tons*	*Tons*	*Cow-acre-days* [1]	*Cow-acre-days* [1]	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*
35	55	2.8	4.1	110	170	140	180	120	185	5.5	8.5
----	----	----	----	28	50	----	----	----	----	----	----
52	77	3.2	4.9	145	235	----	----	----	----	----	----
35	50	2.6	3.8	100	153	140	190	85	150	4.5	8.0
32	47	2.3	3.4	97	150	140	190	82	145	4.5	8.0
30	44	2.0	2.9	88	138	135	175	80	140	4.0	7.5
17	30	1.1	1.9	70	100	90	125	----	----	----	----
----	----	----	----	80	120	----	----	----	----	----	----
----	----	----	----	82	135	----	----	----	----	----	----
35	60	3.5	4.8	110	180	140	190	95	167	6.0	8.5
33	62	3.1	4.1	95	157	140	190	95	167	6.0	8.5
52	77	3.2	4.9	145	234	----	----	----	----	----	----
45	65	2.1	3.4	105	164	----	----	----	----	----	----
20	33	1.7	2.6	80	122	110	150	70	140	3.5	7.0
35	60	3.5	4.8	110	180	160	200	100	170	5.5	9.0
32	50	3.0	4.1	95	158	157	195	90	160	5.0	8.5
22	43	1.9	2.7	86	139	150	185	----	----	4.0	7.0
----	----	----	----	80	120	----	----	----	----	----	----
----	----	----	----	85	131	----	----	----	----	----	----
----	----	----	----	60	95	----	----	----	----	----	----
34	59	3.4	4.7	109	179	160	200	100	170	5.5	9.0
30	50	2.9	4.1	95	155	155	195	90	160	5.0	8.5
21	42	1.8	2.6	85	138	145	175	87	155	4.0	7.0
20	40	1.7	2.5	80	135	140	170	----	----	----	----
----	----	----	----	30	60	----	----	----	----	----	----
55	75	4.4	5.9	130	205	140	190	120	190	6.5	10.0
49	70	3.9	5.4	120	196	135	180	117	185	6.0	9.5
33	52	2.6	4.0	104	164	126	165	110	175	5.5	8.5
25	45	1.4	2.5	77	119	110	150	----	----	3.5	7.0
55	75	4.4	5.9	130	205	140	180	120	190	6.5	10.0
50	70	4.0	5.5	121	197	140	180	117	185	6.0	9.5
35	50	2.6	3.8	100	153	140	190	85	150	4.5	8.0
32	47	2.3	3.4	97	150	140	190	82	145	4.5	8.0
30	44	2.0	2.9	88	138	135	175	80	140	4.0	7.5
35	60	3.5	4.8	110	180	140	190	95	167	6.0	8.5
32	58	3.4	4.7	105	175	135	185	90	162	5.8	8.5
25	45	1.4	2.5	77	119	110	150	70	140	3.5	7.0
30	55	2.0	3.3	85	130	110	150	----	----	3.5	6.0
20	33	1.1	1.9	60	100	110	150	----	----	3.5	7.0
24	42	1.4	2.0	70	115	95	120	----	----	----	----
16	29	1.0	1.8	55	95	100	125	----	----	----	----
----	----	----	----	50	75	----	----	----	----	----	----

[2] Yields are not shown for the Sandy alluvium part of Bibb soils and sandy alluvium, nor for Swamp, because yields from these land types are too variable for meaningful estimates to be made.

special operating methods should be used to protect roots from damage.

WOODLAND GROUP C-4

This group consists of deep, somewhat poorly drained, level and very gently sloping soils that have a surface layer of loam or sandy loam and a moderately permeable or slowly permeable subsoil. The available moisture capacity is moderately high. Roots and water penetrate to considerable depth.

These soils are highly productive and are well suited to slash pine, loblolly pine, and sweetgum. Loblolly pine and slash pine should be favored in planting. They can be expected to grow 90 feet in 50 years. Sweetgum, yellow-poplar, cottonwood, and oaks are also suitable. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—550, and slash—490.

Plant competition is moderate because of the large amount of moisture available to plants in wet seasons. Seedling mortality is slight. Equipment limitations are moderate; logging must be curtailed or delayed in wet seasons. The windthrow hazard is slight because trees develop strong root systems. The erosion hazard is slight.

TABLE 3.—*Average yearly growth per acre of southern pines*

[To age 60. All data from USDA Miscellaneous Publication 50, Forest Service, 1929. Dashed lines indicate data not available]

Site index [1]	Species of pine			
	Loblolly	Slash	Longleaf	Shortleaf
	Board feet	*Board feet*	*Board feet*	*Board feet*
60	200	180	160	260
70	330	290	270	390
80	440	390	390	520
90	550	490	520	640
100	680	590	620	770
110	820	----------	----------	----------

[1] The average height of the dominant and codominant trees in a well-stocked stand at the age of 50 years.

WOODLAND GROUP C-5

This group consists of well-drained, eroded soils that have a friable or firm surface layer and a firm, plastic subsoil. Permeability is slow, and the available water capacity is low. The root zone is shallow.

These soils are somewhat less productive than most of the soils in the county, but they are suited to pine.

Figure 9.—**Well-managed stand of loblolly pine on Dothan loamy sand, 2 to 5 percent slopes. It has had an intermediate cutting that will improve the stand by encouraging more rapid growth and will result in higher yields. This soil is in woodland group C-3.**

Loblolly pine and slash pine should be favored in planting. They can be expected to grow 75 feet in 50 years. Longleaf pine grows about 60 feet in 50 years. Hardwoods should be harvested and pines encouraged as replacements. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—380, slash—350, and longleaf—160.

Plant competition is slight, and seedling mortality is moderate. Stands of desirable species are readily established, but some loss can be expected because the soils are eroded and shallow. Equipment limitations are moderate in most places but severe in the more sloping areas. The windthrow hazard is moderate. The hazard of further erosion is severe where slopes are strong.

WOODLAND GROUP C-6

This group consists of deep, friable, moderately well drained to excessively drained alluvial soils in depressions and on flood plains. These soils are subject to overflow or ponding. The available moisture capacity is low or moderate. Roots and water penetrate easily to considerable depth.

These soils are highly productive. They are well suited to loblolly and slash pine, yellow-poplar, sweetgum, cottonwood, and oaks. Pure stands of pine occur only in old, abandoned fields or in planted areas. Loblolly and slash pine can be expected to grow 105 feet in 50 years. Cottonwood grows about 100 feet in 30 years. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—750, and slash—660.

Plant competition is severe. Seedling mortality is moderate because the soils are subject to flooding. Equipment limitations are moderate; the use of equipment is limited for short periods because of wetness. The windthrow hazard is slight because roots penetrate deeply. The erosion hazard is slight.

WOODLAND GROUP C-7

This group consists of deep, friable, somewhat poorly drained and poorly drained alluvial soils in depressions and on flood plains. These soils are subject to overflow or ponding. The available moisture capacity is high. Roots and water penetrate to considerable depth.

These soils are highly productive. They are well suited to loblolly and slash pine, sweetgum, yellow-poplar, cottonwood, and oaks. These species should be favored in planting. Loblolly and slash pine can be expected to grow 100 feet in 50 years. Yellow-poplar grows 105 feet in 50 years, and cottonwood grows 100 feet in 30 years. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—680, and slash—590.

Plant competition is severe because the soils are deep and well supplied with moisture. Invasion by vines, shrubs, weeds, and unwanted trees is very rapid when openings are made in the canopy.

Seedling mortality is moderate because of flooding.

Equipment limitations are severe when the soil is wet. Wetness sometimes makes the use of conventional logging equipment difficult for as long as 4 to 6 months. Roots may be damaged by use of heavy equipment.

There is a moderate hazard of windthrow because the water table is high and the root system of many trees

is shallow. Tall trees need the protection of surrounding trees.

The erosion hazard is slight.

WOODLAND GROUP C-8

This group consists of miscellaneous land types that vary in texture, drainage, slope, depth, available moisture capacity, and permeability. In some areas the slopes are strong and there are deep gullies and many stones. Other areas are level and swampy, and water stands on the surface most of the time. The soils in this group can be roughly described as being in two categories: (1) shallow, stony, eroded soils, and (2) poorly drained soils.

The eroded soils in this group are low in productivity but can be used for pine. Plant competition is slight in most places, and seedling mortality is severe. Equipment limitations are severe. The windthrow hazard is slight in most places. The hazard of further erosion is severe.

The wet soils in this group are suited to hardwoods and are highly productive if drained. Plant competition is moderate. Seedling mortality is slight. Equipment limitations are severe. The windthrow hazard is moderate. The erosion hazard is severe.

WOODLAND GROUP C-9

This group consists of deep, moderately well drained and somewhat poorly drained soils on stream terraces. These soils have a friable surface layer and a firm, plastic subsoil. The slope range is 0 to 5 percent. The available moisture capacity is moderately high. Roots and water penetrate to considerable depth.

These soils are highly productive. They are well suited to hardwoods and pine. Preferred species are loblolly pine, slash pine, shortleaf pine, sweetgum, yellow-poplar, several kinds of oak, and spruce pine. Most areas are covered with hardwoods, but there are large tracts that support pure stands of pine. Loblolly pine and slash pine can be expected to grow 90 feet in 50 years. Sweetgum grows 100 feet in 50 years, and yellow-poplar grows 95 feet in 50 years. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: loblolly—550, and slash—490.

Plant competition is moderate. A good stand of desirable trees will develop without special cultural practices, but the desirable trees benefit from removal of culls. Practices that completely eliminate competing vegetation and expose the mineral soil are necessary to permit seedling pines to become established.

Seedling mortality is slight if competing vegetation is controlled. The soils are fertile, the moisture supply is favorable, and seedlings grow rapidly.

Equipment limitations are moderate. For 2 or 3 months of the year, conventional logging equipment cannot be used because the soils are too wet.

The windthrow hazard is slight because the water table is low enough to permit well-developed root systems.

The erosion hazard is slight.

WOODLAND GROUP C-10

This group consists of deep, somewhat poorly drained soils on uplands. These soils have a high water table in winter and spring but are droughty in summer and fall. Some areas are ponded for several months in winter. The slope range is 0 to 5 percent. The available moisture capacity is low. Roots and water penetrate easily to a depth of several feet.

These soils are moderately productive. They are suited to pine, and slash pine should be favored in planting. Slash pine can be expected to grow 90 feet in 50 years. Loblolly pine grows about 75 feet in 50 years, and longleaf pine grows about 70 feet. The potential annual yield of pine lumber, in board feet, from an acre of these soils is as follows: slash—490, loblolly—380, and longleaf—270.

Plant competition is moderate. A good stand of desirable trees will develop naturally. When the moisture supply is low, it is advisable to remove unwanted trees. To permit the reestablishment of pine in areas threatened by competing vegetation, it is necessary to eliminate cull trees completely and expose the mineral soil.

Seedling mortality is slight, although the soils are droughty. The dry periods usually occur after seedlings are well established.

Equipment limitations are moderate because the water table in these soils is high in winter and the soils are likely to become ponded. The use of conventional logging equipment is moderately restricted by wetness during these periods.

The windthrow hazard is slight. Trees can withstand strong winds because they develop a strong root system.

The erosion hazard is slight.

Wildlife [3]

The soils of this county produce food and cover for many kinds of wildlife. Some species of wildlife spend most of their time in the woods; others prefer open farmlands; and many, such as beaver and duck, require water for their habitat. Some eat only insects and other animal foods, others eat only vegetation, and some like a combination of the two.

Bobwhites, mourning doves, rabbits, squirrels, and many nongame birds are common throughout the county. Many farms have sites suitable for fishponds. Many parts of the county have large, well-watered woodlands that provide a habitat for deer and wild turkey. The bottom lands along the Chattahoochee and Choctawhatchee Rivers are well suited to beaver and wild duck. Beaver dams are common in these areas and along many smaller streams.

Following is a brief summary of the habitat needs of the more important wildlife species in the county.

Squirrels.—Squirrels eat a variety of foods. In fall and winter their choice foods are acorns, beechnuts, hickory nuts, pecans, and walnuts, the fruit of blackgum trees and flowering dogwood, and the seeds of baldcypress, pine, and magnolia. In spring and summer their choice foods are blackberries, grapes, black cherries, mulberries, mushrooms, pine seeds, the cambium and buds of cottonwood trees, and seeds and buds of

[3] ROBERT E. WATERS, biologist, SCS, assisted with preparation of this section.

elms, maples, and yellow-poplars. Squirrels also eat herbs, insects, and roots. They can live several weeks without water, but they may leave an area if water is not available.

Squirrels prefer large wooded areas where the overstory consists of mature hardwoods and the understory of smaller trees and shrubs. They like areas where they can travel easily between the crowns of the trees. All of the soil associations in the county produce food for squirrels, but the hardwood-producing areas along the rivers in the eastern and western parts of the county are best suited.

Rabbits.—Rabbits eat vegetation almost exclusively. In fall and winter their choice foods are the leaves and stems of succulent forbs, grasses, legumes, and shrubs, and the bark and leaves of shrubs and young trees. In spring and summer their choice foods are green shoots, fruits, grasses, buds, bark, and the tender tips of branches. Free water is not essential, because rabbits can usually get enough moisture from dew and succulent vegetation.

Rabbits thrive where cropland, hayfields, pasture, and woodland (especially cutover woodland and areas reverting to woodland) are about equally represented. Their choice cover includes bunch grasses, trailing briers, thickets, annual weeds, brush, Japanese honeysuckle, and sericea lespedeza. All of the soil associations in the county produce food suitable for rabbits.

Bobwhite quail.—Bobwhites eat seeds, fruits, insects, and small amounts of green vegetation. Their choice wild foods are acorns, annual lespedeza, blackberries, common ragweed, dewberries, Florida beggarweed, milkpeas, mulberries, partridgepeas, and the seeds of pine, sweetgum, tickclover, and woolly croton. Their choice agricultural foods are browntop millet, corn, cowpeas, grain sorghum, Japanese millet, bicolor lespedeza, and wheat. Free water is not essential, because bobwhites can usually get enough moisture from dew, succulent vegetation, and other moist foods.

Bobwhites thrive in areas that are about equally divided into cultivated land, idle land, and woodland. A large part of the cover should be open enough that quail can walk through it freely. Most of the well-drained upland areas in soil associations 1, 2, and 3 produce food suitable for quail.

Mourning doves.—Doves eat seeds almost exclusively. Most of the seeds are from agricultural crops or from grasses and weeds associated with open land. The choice foods of doves are seeds of barnyard grass and bristlegrass, browntop millet, bull paspalum, corn, cranesbill, grain sorghum, Japanese millet, pine seeds, pokeberries, proso millet, ragweed seeds, sweetgum seeds, and wheat. Doves eat only foods that are on relatively open ground and plainly visible; they seldom, if ever, scratch for their food. They drink water daily and prefer a habitat within half a mile of water.

Doves nest in trees near farmhouses and along the edges of fields, pastures, or other clearings. They prefer trees with fairly large horizontal limbs, especially limbs that have little concealing vegetation. They rarely, if ever, nest in dense woodland. They roost in trees and on the ground. They prefer evergreens for roosting, especially during winter, but they frequently roost on relatively bare ground, even during winter. They shun ground cover because it limits their view of approaching enemies and hinders flight.

Engineering [4]

Soil engineering is a part of structural engineering. It deals with the suitability of soils as foundation material upon which structures rest and with the suitability of soils for use as structural material. A soil is generally used at its original location and in the condition in

[4] Ray Smith, assistant materials engineer, Alabama State Highway Department; M. E. Stephens, State soil scientist; and G. F. Rish, agricultural engineer, assisted with preparation of this section.

Table 4.—*Estimated*

Soil series and map symbols	Depth from surface	Classification	
		Dominant USDA texture	Unified
	Inches		
Alaga (AaB, AaC, AaD, AeE2). For properties of Esto part of AeE2, see Esto series.	0 to 60	Loamy sand	SM
Americus (AmB, AmD).	0 to 7	Loamy sand	SM
	7 to 60	Sandy loam	SM
Ardilla (ArA).	0 to 15	Fine sandy loam	SM
	15 to 38	Sandy clay loam	SC
	38 to 60	Sandy clay loam	SC
Bibb (Bb, Bs[1]). For properties of Bladen part of Bb, see Bladen series.	0 to 6	Silt loam	ML
	6 to 26	Sandy loam	SM
	26 to 38	Sandy loam	SC
	38 to 50	Sandy clay loam	CL

which it is found. Some soil properties are of special interest to agricultural engineers because they affect construction of irrigation systems, farm ponds, and structures that conserve soil and water and control erosion.

Information in this report can be used to—

1. Make studies that will aid in selecting sites for industrial, business, residential, and recreational uses.
2. Make preliminary evaluations that will aid in selecting locations for highways, pipelines, and other structures and in planning detailed surveys of the soils at the site.
3. Locate materials needed for specific construction purposes.
4. Estimate the amount and rate of runoff from a watershed.
5. Estimate the sizes and kinds of bridges that may be needed.
6. Supplement information obtained from published maps, reports, and aerial photographs in preparation of soil maps and engineering reports for a specific area.

With the use of the soil map for identification, the engineering interpretations reported here can be useful for many purposes. It should be emphasized that they do not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads or excavations deeper than the depths of layers here reported. Even in these situations, the soil map is useful for planning more detailed field investigations and for suggesting the kinds of problems that may be expected.

Some of the terms used in this publication have a special meaning to soil scientists and a different meaning to engineers. The Glossary at the back of the report defines many such terms as they are used in soil science.

Other parts of the report, particularly the sections "How This Soil Survey Was Made" and "Descriptions of the Soils," give information that can be useful to engineers in evaluating the engineering properties of soils in a particular area.

Engineering classification systems

Two systems of classifying soils for engineering purposes are in general use. Classification of the soils of Houston County according to both of these systems is given in this report. The system that is used by the American Association of State Highway Officials (AASHO) is based on field performance of soils in highways. In this system soil materials are classified into seven principal groups, designated A–1 through A–7. The best materials for engineering purposes (gravelly soils of high bearing capacity) are classified as A–1, and the poorest (clayey soils having low strength when wet) are classified A–7. Within each group, the relative engineering value of the soils is indicated by a group index number. Group indexes range from 0 for the best material to 20 for the poorest.

The Unified system of soil classification was developed by the U.S. Army Corps of Engineers. This system is based on identification of soils according to texture and plasticity and on performance as engineering construction material. In this system, soils are placed in 15 groups, each identified by a letter symbol. The groups range from GW (well-graded gravel) to PT (peat and other highly organic soil material). Soils that have characteristics that place them in a border zone between two major groups are given borderline classifications, such as SM-SC.

Estimated engineering properties

Table 4 gives estimates of some of the soil properties significant in engineering. The estimates are for normal soil profiles and for the layers significant in engineering. If test data are available, the average values from table 5 are shown. If test data are not available, estimates are based on results of tests on similar soils in other counties and on engineering experience. Some variation in properties can be expected, because some soils within any series vary from the normal.

properties of the soils

Classification—Continued	Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)				
				Inches per hour	*Inches per inch of soil*	*pH*	
A–2	95 to 100	95 to 100	15 to 30	>6.3	0.07	4.5 to 6.0	Low.
A–2	100	100	15 to 30	>6.3	.10	5.6 to 6.0	Low.
A–2	100	98 to 100	20 to 25	2.0 to 6.3	.10	5.1 to 6.0	Low.
A–2	100	98 to 100	25 to 35	2.0 to 6.3	.09	5.1 to 5.5	Low.
A–2, A–4	100	100	30 to 40	2.0 to 6.3	.10	5.1 to 5.5	Low.
A–4 or A–6	100	98 to 100	35 to 45	0.2 to 0.63	.10	5.1 to 5.5	Moderate.
A–6	100	100	60 to 70	2.0 to 6.3	.11	5.1 to 5.5	Low.
A–2	100	100	25 to 35	2.0 to 6.3	.10	5.1 to 5.5	Low.
A–2, A–4	100	100	30 to 40	0.63 to 2.0	.11	5.1 to 5.5	Moderate.
A–6	100	100	50 to 60	2.0 to 6.3	.10	5.1 to 5.5	Moderate.

TABLE 4.—*Estimated properties*

Soil series and map symbols	Depth from surface	Classification: Dominant USDA texture	Classification: Unified
	Inches		
Bladen (Bt).	0 to 9	Silt loam	ML, CL
	9 to 52	Clay	MH, CH
Buncombe (Bu).	0 to 48	Loamy sand	SM
	48 to 56	Sand	SP
Carnegie (CaB2, CaC2, CsB2, CsC2, CsC3, CsD2, CtD). For properties of Sunsweet part of CsB2, CsC2, CsC3, CsD2, and CtD, see Sunsweet series.	0 to 7	Fine sandy loam	SM
	7 to 25	Clay loam	SM, SC
	25 to 60	Sandy clay	CL, CH
Cowarts (CoB2, CoC2, CoC3, CoD2).	0 to 8	Fine sandy loam	SM
	8 to 38	Sandy clay loam	SM
	38 to 56	Sandy clay	SC
Dothan (DoA, DoB, DoB2, DoC2).	0 to 13	Loamy sand	SM
	13 to 60	Sandy clay loam	SM
Dunbar (DuA, DuB, DvA).	0 to 7	Fine sandy loam	SM
	7 to 14	Sandy clay	SC
	14 to 58	Clay	MH
Esto (EsB, EsB2, EsC2, EtD3).	0 to 10	Loamy sand	SM
	10 to 43	Sandy clay or clay	SC, CL
	43 to 72	Sandy loam	SC
Faceville (FaA, FaB2).	0 to 6	Fine sandy loam	SM
	6 to 40	Clay loam	CL, SC
	40 to 58	Sandy clay loam	SC
Flint (FlA, FlB).	0 to 6	Fine sandy loam	SM
	6 to 44	Clay	CH, CL
	44 to 52	Sandy loam	SM
Grady (Gd).	0 to 9	Silt loam	ML, CL
	9 to 34	Clay	MH
	34 to 48	Sandy clay	CL, MH
Grangeburg (GfA, GfB).	0 to 24	Fine sandy loam	SM
	24 to 60	Sandy clay loam	SC
Greenville (GrA, GrB2, GrC2).	0 to 7	Fine sandy loam	SM
	7 to 40	Clay loam	SC
	40 to 65	Sandy clay loam	SC
Gullied land (Gu).	(3)	(3)	(3)
Iuka (Iu).	0 to 44	Sandy loam	SM
	44 to 60	Sandy clay loam	SC
Lucy (LuA, LuB, LuC, LuE).	0 to 24	Loamy sand	SM
	24 to 35	Sandy loam	SM
	35 to 76	Sandy clay loam	SC, SM
Mantachie (Ma, Mn).	0 to 34	Silt loam	ML
	34 to 48	Sandy loam	SM
Maxton (MxA, MxB).	0 to 23	Sandy loam	SM
	23 to 39	Sandy clay loam	SC
	39 to 46	Sandy loam	SM
Ochlockonee (Oc).	0 to 7	Fine sandy loam	SM
	7 to 17	Silt loam	ML
	17 to 28	Fine sandy loam	SM
	28 to 50	Loamy fine sand	SM

of the soils—Continued

Classification—Continued	Percentage passing sieve—			Permeability	Available water capacity	Reaction	Shrink-swell potential
AASHO	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)				
				Inches per hour	*Inches per inch of soil*	*pH*	
A-4	100	100	55 to 70	0. 63 to 2. 0	. 15	5. 1 to 5. 5	Low.
A-6, A-7	100	100	60 to 75	0. 2 to 0. 63	. 12	4. 5 to 5. 5	High.
A-2	100	98 to 100	15 to 30	>6. 3	. 07	5. 1 to 6. 0	Low.
A-1	100	98 to 100	5 to 15	>6. 3	. 05	5. 1 to 5. 5	Low.
A-2	75 to 85	75 to 85	15 to 30	2. 0 to 6. 3	. 10	[2] 6. 6 to 6. 8	Low.
A-2, A-4	85 to 95	85 to 95	30 to 40	0. 63 to 2. 0	. 15	5. 1 to 5. 5	Moderate.
A-7, A-6	95 to 100	80 to 95	50 to 60	0. 2 to 0. 63	. 14	5. 1 to 5. 5	Low.
A-2	95 to 100	95 to 100	20 to 30	2. 0 to 6. 3	. 10	[2] 5. 6 to 6. 4	Low.
A-2, A-4	95 to 100	95 to 100	30 to 40	0. 2 to 0. 63	. 11	5. 1 to 5. 5	Low.
A-4, A-2	95 to 100	95 to 100	30 to 45	0. 2 to 0. 63	. 09	5. 1 to 5. 5	Low.
A-2	95 to 100	95 to 100	20 to 30	2. 0 to 6. 3	. 10	5. 1 to 5. 5	Low.
A-2, A-4	95 to 100	95 to 100	30 to 45	0. 2 to 0. 63	. 15	5. 1 to 5. 5	Low.
A-2	100	100	20 to 30	0. 63 to 2. 0	. 14	5. 1 to 5. 5	Low.
A-4	100	100	35 to 50	0. 63 to 2. 0	. 15	5. 1 to 5. 5	Moderate.
A-7	100	100	50 to 60	0. 2 to 0. 63	. 14	5. 1 to 5. 5	High.
A-2	95 to 100	95 to 100	15 to 30	>6. 3	. 07	[2] 6. 6 to 6. 8	Low.
A-6, A-7	95 to 100	95 to 100	40 to 60	0. 2 to 0. 63	. 12	5. 1 to 6. 0	Moderate to high.
A-2	95 to 100	95 to 100	20 to 30	0. 2 to 0. 63	. 09	5. 1 to 6. 0	Low.
A-2, A-4	95 to 100	95 to 100	30 to 40	2. 0 to 6. 3	. 10	5. 6 to 6. 0	Low.
A-6	100	100	50 to 60	0. 63 to 2. 0	. 14	5. 1 to 5. 5	Moderate.
A-6, A-2	100	100	30 to 45	0. 63 to 2. 0	. 14	5. 1 to 5. 5	Moderate.
A-2, A-4	100	98 to 100	30 to 40	2. 0 to 6. 3	. 10	5. 1 to 5. 5	Low.
A-7	100	98 to 100	60 to 80	0. 2 to 0. 63	. 12	5. 1 to 5. 5	High.
A-2	100	100	25 to 65	0. 63 to 2. 0	. 13	4. 5 to 5. 0	Moderate.
A-4, A-6	100	100	55 to 65	0. 63 to 2. 0	. 14	5. 6 to 6. 0	Low.
A-7	100	100	55 to 75	<0. 2	. 13	5. 6 to 6. 0	Moderate.
A-7	100	100	55 to 75	0. 2 to 0. 63	. 13	5. 6 to 6. 0	Moderate.
A-2	95 to 100	95 to 100	20 to 35	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-2, A-4	95 to 100	95 to 100	30 to 45	0. 63 to 2. 0	. 15	5. 1 to 5. 5	Moderate.
A-2	100	98 to 100	20 to 35	2. 0 to 6. 3	. 12	5. 6 to 6. 0	Low.
A-6	100	100	35 to 50	0. 63 to 2. 0	. 14	5. 6 to 6. 0	Moderate.
A-4	100	100	35 to 50	2. 0 to 6. 3	. 12	5. 6 to 6. 0	Moderate.
([3])	([3])	([3])	([3])	([3])	([3])	([3])	([3]).
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 45	0. 63 to 2. 0	. 14	5. 1 to 5. 5	Moderate.
A-2	100	100	15 to 30	>6. 3	. 10	5. 1 to 5. 5	Low.
A-2, A-4	100	100	20 to 40	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 45	2. 0 to 6. 3	. 14	5. 1 to 5. 5	Low.
A-6	100	100	55 to 65	2. 0 to 6. 3	. 15	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 12	5. 1 to 6. 0	Low.
A-2, A-4	100	100	30 to 45	2. 0 to 6. 3	. 14	5. 1 to 5. 5	Moderate.
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 13	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-6	100	100	55 to 65	2. 0 to 6. 3	. 15	5. 1 to 5. 5	Low.
A-2, A-4	100	100	30 to 40	2. 0 to 6. 3	. 12	5. 1 to 5. 5	Low.
A-2	100	100	15 to 30	>6. 3	. 10	5. 1 to 5. 5	Low.

TABLE 4.—*Estimated properties*

Soil series and map symbols	Depth from surface	Classification	
		Dominant USDA texture	Unified
	Inches		
Ocilla (OfA, OfB).	0 to 32	Loamy sand	SM
	32 to 52	Sandy loam or sandy clay loam	SM
Orangeburg (OrA, OrB2, OrC2).	0 to 19	Fine sandy loam	SM
	19 to 60	Sandy clay loam	SM
Pansey (Pa).	0 to 20	Fine sandy loam	SM
	20 to 60	Sandy clay loam	SM, SC
Pelham (Pe).	0 to 40	Sand	SP
	40 to 47	Sandy loam	SM
	47 to 52	Sandy clay loam	SM
Plummer (Pm).	0 to 43	Loamy sand	SM, SP
	43 to 55	Sandy loam to sandy clay	SM, SC
Red Bay (RbA, RbB2, RbC2, RbD2).	0 to 26	Sandy loam	SM
	26 to 42	Sandy clay loam	SC, SM
	42 to 62	Sandy loam	SM, SC
Rough broken and stony land (Ro).[4]	(3)	(3)	(3)
Sunsweet.	0 to 5	Fine sandy loam	SM
	5 to 9	Sandy clay	SC
	9 to 60	Sandy clay loam	SC, SM
Swamp (Sw).[5]	(3)	(3)	(3)
Tifton (TfA, TfB2, TfC2).	0 to 14	Fine sandy loam	SM
	14 to 35	Sandy clay loam	SM, SC
	35 to 72	Sandy clay loam	SC, SM
Troup (TrB).	0 to 44	Loamy sand	SM
	44 to 66	Sandy loam	SM
Varina (VaA, VaB2).	0 to 5	Fine sandy loam	SM
	5 to 30	Sandy clay	SC, CL
	30 to 60	Sandy clay loam	SC
Wagram (WaA, WaB, WaC).	0 to 24	Loamy sand	SM
	24 to 74	Sandy loam to sandy clay loam	SM, SC
Wickham (WcA, WcB).	0 to 10	Fine sandy loam	SM
	10 to 36	Sandy clay loam to clay loam	SC, CL
	36 to 66	Heavy sandy loam	SM-SC
	66 to 72	Sand	SP
Wicksburg (WeB, WeC2, WeD2). For properties of Esto part, see Esto series.	0 to 26	Loamy sand	SM
	26 to 76	Clay	CL

[1] The properties of the Sandy alluvium part of Bibb soils and sandy alluvium (Bs) are too variable for meaningful estimates to be made. This land type receives frequent deposits of sediments from overflowing streams. It is highly stratified, and the texture of its layers varies. It has a high water table.

[2] Recently limed.

Engineering test data

Table 5 gives engineering test data for samples of some of the soils in Houston County. The tests were made by the Alabama State Highway Department according to standard procedures. The data were obtained by mechanical analysis and by tests made to determine the liquid limit and plastic limit of the soil material. The mechanical analysis was made by a combination of the sieve and hydrometer methods. The percentage of clay determined by these tests should not be used as a basis for naming textural classes of soils.

of the soils—Continued

Classification—Continued: AASHO	Percentage passing sieve— No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 200 (0.074 mm.)	Permeability	Available water capacity	Reaction	Shrink-swell potential
				Inches per hour	*Inches per inch of soil*	*pH*	
A-2	100	100	15 to 30	>6.3	.10	4.5 to 5.5	Low.
A-2, A-4	100	100	30 to 40	0.63 to 2.0	.12	4.5 to 5.0	Low.
A-2	100	100	20 to 30	>6.3	.10	5.1 to 6.0	Low.
A-2, A-4	100	100	30 to 45	2.0 to 6.3	.13	5.1 to 5.5	Low.
A-2, A-4	100	95 to 100	30 to 40	2.0 to 6.3	.12	5.1 to 5.5	Low.
A-2, A-4	100	95 to 100	30 to 45	0.2 to 0.63	.14	5.1 to 5.5	Low.
A-1	100	100	10 to 20	>6.3	.03	5.1 to 6.0	Low.
A-2	100	100	20 to 30	2.0 to 6.3	.12	5.1 to 5.5	Low.
A-2, A-6	100	100	30 to 45	0.2 to 0.63	.12	5.1 to 5.5	Moderate.
A-2	100	100	10 to 20	>6.3	.07	4.5 to 5.0	Low.
A-2, A-4	100	100	20 to 45	2.0 to 6.3	.12	4.5 to 5.0	Low.
A-2	100	95 to 100	20 to 30	>6.3	.10	5.1 to 6.0	Low.
A-2, A-4	100	95 to 100	30 to 45	2.0 to 6.3	.12	5.1 to 5.5	Low.
A-2	100	95 to 100	20 to 35	2.0 to 6.3	.11	5.1 to 5.5	Low.
(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3).
A-2	80 to 95	80 to 95	20 to 30	>6.3	.10	5.6 to 6.0	Low.
A-4, A-7	85 to 95	85 to 95	35 to 50	2.0 to 6.3	.14	5.1 to 5.5	Moderate.
A-2, A-4, A-7	90 to 95	90 to 95	30 to 45	0.63 to 2.0	.14	5.1 to 5.5	Low.
(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3).
A-2	85 to 95	85 to 95	20 to 30	2.0 to 6.3	.10	5.1 to 6.0	Low.
A-2, A-4	85 to 95	85 to 95	30 to 45	0.63 to 2.0	.15	5.1 to 5.5	Moderate.
A-4, A-6, A-7	90 to 100	85 to 100	35 to 45	0.2 to 0.63	.14	4.5 to 5.5	Low.
A-2	100	100	15 to 30	>6.3	.08	5.1 to 5.5	Low.
A-2	100	100	20 to 35	2.0 to 6.3	.10	5.1 to 5.5	Low.
A-2, A-4	95 to 100	90 to 100	20 to 40	2.0 to 6.3	.14	5.6 to 6.0	Low.
A-4	95 to 100	90 to 100	45 to 60	0.63 to 2.0	.16	5.1 to 5.5	Moderate.
A-2, A-6	95 to 100	90 to 100	30 to 45	0.2 to 0.63	.13	5.1 to 5.5	Low.
A-2	100	100	15 to 30	>6.3	.08	4.5 to 5.5	Low.
A-2, A-4	100	100	20 to 40	2.0 to 6.3	.10	5.1 to 5.5	Low.
A-2, A-4	100	100	20 to 40	2.0 to 6.3	.12	5.6 to 6.0	Low.
A-7	100	100	45 to 60	0.63 to 2.0	.14	5.1 to 5.5	High.
A-2, A-4	100	98 to 100	20 to 40	2.0 to 6.3	.12	5.1 to 5.5	Low.
A-2	100	100	10 to 20	>6.3	.04	5.1 to 5.5	Low.
A-2	100	100	15 to 30	>6.3	.07	5.1 to 6.0	Low.
A-7	100	100	50 to 75	0.2 to 0.63	.12	5.1 to 6.0	Low.

[3] All properties variable.
[4] Topography is uneven. Many stones occur on the surface and in the profile. The soil material is highly variable in texture and depth.
[5] This land type is under water most of the year.

Samples were taken from three locations for each of the soil series tested. The profile described as ortho in table 5 is typical of the soils of that series as they occur in Houston County. The other two profiles were analyzed to show significant variations in characteristics within the standard concept of the series. The test data probably do not show the maximum variations in physical characteristics in the B and C horizons. All of the samples were obtained at a depth of less than 7 feet; therefore, the data given in table 5 should not be used for estimating characteristics of soil material below this depth.

TABLE 5.—*Engineering*

[Tests performed by the Alabama Highway Department in accordance with standard procedures

Soil name and location	Parent material	Alabama report No.	Depth from surface	Horizon
			Inches	
Dothan loamy sand:				
SE¼NW¼SE¼ sec. 30, T. 2 N., R. 26 E. (Ortho.)	Marine sediments.	7678	0 to 8	Ap
		7608	21 to 47	B2t
		7689	55 to 72	C1
NW¼SE¼SW¼ sec. 4, T. 2 N., R. 26 E. (Finer textured subsoil than that of ortho.)	Marine sediments.	7669	0 to 7	Ap
		7699	14 to 44	B2t
		7693	62 to 72	C2
SW¼NW¼SE¼ sec. 26, T. 2 N., R. 28 E. (Coarse textured subsoil.)	Marine sediments.	7622	0 to 8	Ap
		7670	28 to 60	B2t
Esto loamy sand:				
NW¼SW¼NW¼ sec. 30, T. 1 N., R. 27 E. (Ortho.)	Unconsolidated marine-deposited sand and clay.	7679	0 to 5	Ap
		7685	15 to 20	B22t
		7687	20 to 43	B23tg
		7615	43 to 72	B3
Esto soils:				
NE¼SE¼SE¼ sec. 28, T. 1 N., R. 26 E. (More friable than ortho, and thicker solum.)	Marine deposits.	7612	0 to 9	Ap
		7667	15 to 21	B21t
		7675	21 to 39	B22tg
		7623	39 to 72	B3
NE¼NE¼SW¼ sec. 26, T. 1 N., R. 26 E. (Shallow.)	Marine deposits.	7688	0 to 5	Ap
		7692	5 to 42	B2t
		7698	42 to 70	IIC2
Flint fine sandy loam:				
NE¼NW¼SW¼ sec. 33, T. 2 N., R. 30 E. (Ortho.)	Alluvium.	7700	0 to 4	A1
		7607	18 to 29	B22t
		7691	66 to 72	IIC2
NE¼NE¼NE¼ sec. 29, T. 2 N., R. 30 E. (Less plastic than ortho and more sandy in the lower part.)	Alluvium.	7672	0 to 6	Ap
		7614	16 to 34	B22t
		7682	44 to 64	C1
NE¼NW¼SW¼ sec. 20, T. 2 N., R. 30 E. (More poorly drained than ortho.)	Alluvium.	7681	0 to 8	Ap
		7676	11 to 20	B21t
		7616	36 to 72	C1
Pansey fine sandy loam:				
SW¼SE¼NW¼ sec. 7, T. 1 N., R. 28 E. (Ortho.)	Unconsolidated marine deposits.	7620	0 to 6	A1
		7618	19 to 36	B2tg
		7619	36 to 52	C1g
NE¼NE¼NW¼ sec. 18, T. 1 N., R. 29 E. (Thicker and sandier A horizon than that of ortho.)	Unconsolidated marine deposits.	7690	0 to 5	A11
		7703	12 to 22	A2g
		7702	28 to 37	B2tg
		7680	37 to 72	C1g
NW¼SW¼ sec. 36, T. 3 N., R. 26 E. (More clayey than ortho.)	Unconsolidated marine deposits.	7695	0 to 9	A1
		7701	20 to 30	B22tg
		7697	49 to 72	C2g
Red Bay sandy loam:				
NW¼NW¼SW¼ sec. 24, T. 3 N., R. 25 E. (Ortho.)	Marine deposits.	7674	0 to 6	Ap
		7668	22 to 52	B2t
		7610	52 to 72	B3
SW¼SE¼SW¼ sec. 13, T. 3 N., R. 25 E. (Finer textured than ortho.)	Marine deposits.	7666	0 to 7	Ap
		7621	24 to 48	B2t
		7684	48 to 72	B3
SW¼SW¼NW¼ sec. 24, T. 3 N., R. 25 E. (Coarser textured than ortho.)	Marine deposits.	7677	0 to 7	Ap
		7611	42 to 66	B2t
		7673	66 to 72	B3

test data

of the American Association of State Highway Officials (AASHO)]

Moisture-density data [1]		Mechanical analysis [2]						Liquid limit	Plasticity index	Classification	
		Percentage passing sieve—					Percentage smaller than 0.022 mm.				
Maximum dry density	Optimum moisture	¾-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				AASHO	Unified [3]
Lb. per cu. ft.	*Percent*										
118	9	100	99	99	79	19	7	[4]	[4]	A-2-4(0)	SM.
121	10	100	99	98	83	33	21	23	6	A-2-4(0)	SM-SC.
120	12	100	99	98	81	32	22	24	4	A-2-4(0)	SM-SC.
119	9	--------	100	99	88	22	9	14	0	A-2-4(0)	SM.
112	14	--------	--------	100	89	45	35	29	9	A-4(2)	SC.
115	12	--------	--------	100	90	42	31	26	8	A-4(1)	SC.
117	9	--------	100	99	74	15	6	[4]	[4]	A-2-4(0)	SM.
126	10	100	99	99	78	27	19	18	2	A-2-4(0)	SM.
120	9	100	99	99	68	15	8	[4]	[4]	A-2-6(0)	SM.
108	15	100	99	99	80	46	39	36	18	A-6(4)	SC.
118	13	--------	100	99	78	42	38	41	25	A-7-6(6)	SC.
122	11	100	99	98	67	24	23	28	12	A-2-6(0)	SC.
116	9	100	99	99	63	11	5	[4]	[4]	A-2-4-(0)	SM.
116	12	100	99	98	68	30	24	27	12	A-2-6(0)	SC.
102	19	--------	100	99	68	47	46	52	24	A-7-6(8)	SM-SC.
110	14	--------	100	99	69	35	25	44	21	A-2-7(2)	SC.
118	9	100	99	99	82	20	9	[4]	[4]	A-2-4(0)	SM.
91	26	--------	--------	100	98	89	88	64	30	A-7-5(20)	MH.
87	29	--------	--------	100	99	91	80	56	24	A-7-5(17)	MH.
110	13	--------	100	99	92	39	9	[4]	[4]	A-4(1)	SM.
98	24	--------	--------	100	99	76	65	59	32	A-7-6(20)	CH.
114	14	--------	--------	100	98	27	20	24	2	A-2-4(0)	SM.
118	11	100	99	99	86	31	10	18	0	A-2-4(0)	SM.
100	21	--------	100	99	98	72	53	47	24	A-7-6(14)	CL.
104	14	--------	100	99	84	61	48	52	28	A-7-6(14)	CH.
114	12	--------	--------	100	92	34	12	17	0	A-2-4(0)	SM.
102	19	--------	100	99	94	73	53	43	16	A-7-6(11)	ML-CL.
105	18	--------	--------	100	99	65	59	43	20	A-7-6(10)	CL.
107	14	--------	--------	100	89	39	26	30	3	A-4(1)	SM.
125	7	--------	--------	100	86	32	19	16	2	A-2-4(0)	SM.
123	11	--------	--------	100	85	34	22	21	6	A-2-4(0)	SM-SC.
112	11	--------	--------	100	90	24	3	[4]	[4]	A-2-4(0)	SM.
115	11	100	99	99	87	17	4	[4]	[4]	A-2-4(0)	SM.
123	9	--------	100	99	89	34	21	19	6	A-2-4(0)	SM-SC.
124	9	100	99	99	90	33	20	18	5	A-2-4(0)	SM-SC.
106	16	--------	--------	100	84	41	25	[4]	[4]	A-4(1)	SM.
122	10	--------	100	99	76	30	20	20	8	A-2-4(0)	SC.
112	15	--------	--------	100	89	61	50	34	16	A-6(8)	CL.
122	10	--------	100	99	65	20	17	16	0	A-2-4(0)	SM.
115	12	--------	100	99	74	34	30	29	9	A-2-4(0)	SC.
120	11	100	99	99	74	28	26	29	11	A-2-6(0)	SC.
125	10	--------	100	99	77	22	15	18	3	A-2-4(0)	SM.
114	15	--------	100	99	86	46	43	40	16	A-6(4)	SM-SC.
120	12	100	99	99	80	31	28	33	11	A-2-6(0)	SM-SC.
115	12	--------	100	99	72	23	16	22	1	A-2-4(0)	SM.
122	12	100	99	99	73	29	25	23	6	A-2-4(0)	SM-SC.
120	11	100	99	99	69	21	16	18	0	A-2-4(0)	SM.

TABLE 5.—*Engineering*

[Tests performed by the Alabama Highway Department in accordance with standard procedures

Soil name and location	Parent material	Alabama report No.	Depth from surface	Horizon
			Inches	
Tifton fine sandy loam:				
SE¼NW¼NE¼ sec. 12, T. 3 N., R. 26 E. (Ortho.)	Unconsolidated marine sediments.	7694	0 to 6	Ap
		7683	14 to 35	B2t
		7609	72	C2
NE¼NW¼SW¼ sec. 12, T. 3 N., R. 26 E. (Shallow.)	Unconsolidated marine sediments.	7606	0 to 4	Ap
		7671	4 to 24	B2t
		7686	40 to 72	C2
SW¼SE¼NW¼ sec. 21, T. 2 N., R. 28 E. (Coarser textured than ortho.)	Unconsolidated marine sediments.	7613	0 to 6	Ap
		7617	10 to 30	B2t
		7696	37 to 72	C1

[1] Based on AASHO Designation: T 99–57, "Moisture-density Relations of Soils Using 5.5-lb. Rammer and 12-in. Drop (Method A)" in "Standard Specifications for Highway Materials and Methods of Sampling and Testing," pt. 2, Ed. 8 (1961), published by AASHO.

[2] Mechanical analysis according to AASHO Designation: T 88–57. Results by this procedure may differ somewhat from results obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by the hydrometer method, and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method, and the material coarser

Engineering interpretations

Table 6 shows the suitability of the soils for use in construction and the soil features affecting common engineering practices. It also rates the soils according to their degree of limitation for use as drainage fields for septic tank systems. These interpretations are based on the estimates shown in table 4, on test data given in table 5 and on field experience.

Some of the soils on stream terraces are possible sources of gravel at a depth of about 3 to 6 feet. Such soils are those of the Alaga, Flint, Maxton, and Wickham series.

Formation, Morphology, and Classification of the Soils

This section describes the major factors that have affected the formation and composition of the soils of Houston County. It discusses briefly the principal processes of soil formation and shows how the soils of the county are classified into categories broader than the series.

Factors of Soil Formation

Soil is the product of the interaction of climate, parent material, plant and animal life, time, and topography. The relative importance of these factors differs from place to place. In some places one factor is dominant, and in other places another. The effect of any one of the soil-forming factors is modified to some degree by all of the others.

Climate

The climate of Houston County is warm and humid. Summers are long and hot. Winters are short and mild, and the ground rarely freezes to a depth of more than a few inches. The climate is fairly even throughout the county and accounts for few differences among the soils. Rainfall averages 52.6 inches a year.

A mild, humid climate such as this favors rapid decomposition of organic matter and hastens chemical reactions in the soil. The plentiful rainfall leaches out large amounts of soluble bases and carries the less soluble fine particles downward; consequently, the soils are acid, sandy, and low in natural fertility. The structure of the subsoil is weak in the finer textured soils because the subsoil is seldom dry. Some of the soils are shallow because water erosion removes the soil material nearly as fast as it accumulates. The large amount of moisture and the warm temperature favor the growth of bacteria and fungi and speed the decomposition of organic matter. As a result, the soils are low in organic-matter content.

Parent material

The soils of Houston County developed mainly in two kinds of material: marine sediments that have undergone considerable weathering in place, and water-deposited material on stream terraces and flood plains. Soils that developed in weathered marine sediments include those of the Dothan, Varina, Orangeburg, Tifton, and Carnegie series. Soils that developed in water-deposited material on stream terraces include those of the Ochlockonee, Bibb, and Mantachie series.

test data—Continued

of the American Association of State Highway Officials (AASHO)]

Moisture-density data [1]		Mechanical analysis [2]						Liquid limit	Plasticity index	Classification	
		Percentage passing sieve—					Percentage smaller than 0.022 mm.				
Maximum dry density	Optimum moisture	¾-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				AASHO	Unified [3]
Lb. per cu. ft.	*Percent*										
123	10	100	92	90	70	20	10	15	0	A–2–4(0)	SM.
118	13	100	91	89	75	37	28	24	5	A–4(0)	SM–SC.
107	18	--------	90	85	64	36	33	40	13	A–6(1)	SM–SC.
122	11	--------	79	77	64	19	10	17	1	A–2–4(0)	SM.
-----------	-----------	99	90	88	73	33	26	26	11	A–2–6 0)	SC.
100	20	--------	99	99	84	55	54	51	24	A–7–6(11)	MH–CH.
124	12	--------	99	97	82	29	16	16	1	A–2–4(0)	SM.
114	15	--------	88	81	70	40	32	30	10	A–4(1)	SC.
112	15	100	92	89	77	42	34	24	0	A–4(1)	SM.

than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechanical analysis data used in this table are not suitable for use in naming textural classes for soils.

[3] Soil Conservation Service and Bureau of Public Roads have agreed to consider that all soils having plasticity indexes within 2 points from A-line are to be given a borderline classification. Examples of borderline classifications obtained by this use are SM–SC and ML–CL.

[4] Nonplastic.

Plant and animal life

Living organisms, both plant and animal, play an important role in soil development. Animals continuously mix the soil material, and plant roots create channels through which air and moisture move. Organic matter affects the moisture and mineral content of the soil. Acids released by decomposition of organic matter alter the rate of chemical reaction.

The native vegetation on the upland soils was nearly pure stands of pine with scattered hardwoods. The stream terraces supported mixed stands, consisting of gum and other hardwoods and pine. Hardwoods were predominant on the flood plains, but there were also a few scattered pines.

Man's activities have had an important influence on the soils. He has cleared the land, stirred the soil, compacted it, added and removed mineral elements, added water by irrigation, and removed water by drainage. He has altered the plant cover and modified the kinds and numbers of animal life.

Time

If all other factors of soil formation are equal, the degree of soil development is in direct proportion to time. If soil-forming factors have been active for a long time, horizonation is stronger than if the same factors have been active for a relatively short time.

Geologically, most of the soils of Houston County are fairly young. The youngest are the alluvial soils along streams. These soils receive deposits of sediments and are going through a cumulative soil-forming process. In most places these young soils have very weakly developed horizons, mainly because of the short period of time soil-forming processes have been active.

The second youngest soils in the county are those on terraces of the Chattahoochee and Choctawhatchee Rivers. The material in which they developed was deposited by the rivers, but the river channels are now deeper and overflow no longer reaches these soils. Many of these soils have fairly strong development.

The oldest soils in the county are those on upland flats and level plateaus. They developed in marine sediments that have undergone considerable weathering.

Topography

Topography influences the formation of soils through its effect on drainage, runoff, and erosion. In Houston County the topography is nearly level to strongly sloping. The elevation ranges from 120 to 345 feet above sea level. Large flat areas and depressions are generally poorly drained, and soil development is retarded by accumulated water, much of which is received as runoff from adjacent areas. As slope increases, runoff increases in intensity, less water is absorbed and becomes available to plants, and erosion accelerates. In places erosion nearly keeps pace with soil development, and consequently, the soils on steep slopes are generally shallow and weakly developed.

The direction of slope affects the microclimate. Soils on slopes that face south or southwest warm up somewhat earlier in spring and usually reach a higher temperature each day than soils that face north. This results in accelerated chemical weathering. The soils on north-facing slopes retain moisture longer because they are in shade for longer periods and the temperature is

TABLE 6.—*Engineering*

Soil series and map symbol	Suitability for winter grading	Suitability for— Road subgrade	Suitability for— Road fill	Suitability as a source of— Topsoil	Suitability as a source of— Sand	Degree of limitation as disposal fields for septic-tank systems
Alaga (AaB, AaC, AaD, AeE2). For interpretations of Esto soils in AeE2, see Esto series.	Good	Good	Fair	Fair	Fair	Slight.
Americus (AmB, AmD)	Good	Good	Fair	Fair	Fair	Slight.
Ardilla (ArA)	Poor	Fair	Fair	Good	Poor	Severe: slow absorption rate; high water table.
Bibb (Bb, Bs [1]). For interpretations of Bladen part of Bb, see Bladen series.	Poor	Poor	Poor	Good to a depth of 6 inches.	Poor	Severe: high water table.
Bladen (Bt)	Poor	Poor	Poor	Good to a depth of 6 inches.	Poor	Severe: high water table.
Buncombe (Bu)	Good	Good to a depth of 4 feet; fair below.	Good	Fair	Fair or good	Severe: subject to overflow.
Carnegie (CaB2, CaC2, CsB2, CsC2, CsC3, CsD2, CtD [1]). For interpretations of Sunsweet part of CsB2, CsC2, CsC3, CsD2, and CtD, see Sunsweet series.	Fair	Fair	Fair	Good to a depth of 6 inches.	Poor	Severe: slow absorption rate.
Cowarts (CoB2, CoC2, CoC3, CoD2).	Fair	Fair	Fair	Good to a depth of 6 inches.	Poor	Severe: slow absorption rate.
Dothan (DoA, DoB, DoB2, DoC2)	Fair	Fair	Fair	Good	Poor	Slight.
Dunbar (DuA, DuB, DvA)	Poor	Poor	Poor	Fair	Poor	Severe: slow absorption rate; high water table.
Esto (AeE2, EsB, EsB2, EsC2, EtD3). For interpretations of Alaga part of AeE2, see Alaga series.	Poor	Poor	Poor	Poor	Poor	Severe: slow absorption rate.
Faceville (FaA, FaB2)	Poor	Poor	Poor	Fair	Poor	Moderate: moderate absorption rate.
Flint (FlA, FlB)	Poor	Poor	Poor	Fair	Poor	Severe: slow absorption rate.
Grady (Gd)	Poor	Poor	Poor	Poor	Poor	Severe: slow absorption rate; high water table.
Grangeburg (GfA, GfB)	Poor	Fair	Fair	Good	Poor	Severe: slow absorption rate; high water table.

interpretations

Soil features affecting—						
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir area	Embankment				
Rapid seepage	Rapid seepage	Not needed	Rapid infiltration; low available water capacity.	Not suitable for terraces; erosion hazard.	Not suitable for waterways; erosion hazard.
Rapid seepage	Rapid seepage	Not needed	Rapid infiltration; low available water capacity.	Not suitable for terraces; erosion hazard.	Not suitable for waterways; erosion hazard.
Slow seepage	High strength and stability.	Moderate or rapid permeability; suitable for open-ditch drainage.	Moderate infiltration; moderately high available water capacity.	Not needed	Not needed.
High water table	Moderate strength and stability.	Moderate or rapid permeability; suitable for open-ditch drainage; high water table.	Moderate infiltration; moderately high available water capacity.	Not needed	Not needed.
High water table	Low strength and stability.	High water table; slow permeability; suitable for open-ditch drainage.	Slow infiltration; high available water capacity.	Not needed	Not needed.
Rapid seepage; subject to overflow.	Rapid seepage	Not needed	Rapid infiltration; low available water capacity.	Not needed	Not needed.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; shallow soil; low available water capacity in root zone.	Easy to build and maintain.	Difficult to establish vegetation where surface has been removed.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; shallow soil; low available water capacity in root zone.	Easy to build and maintain.	Difficult to establish vegetation where surface has been removed.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Easy to establish vegetation.
Slow seepage	Moderate or low strength and stability.	High water table; slow permeability; surface water in places.	Moderate infiltration; moderately high available water capacity.	Terraces not needed.	Not needed.
Slow seepage	Moderate or low strength and stability.	Not needed	Moderate infiltration; low available water capacity; shallow root zone.	Shallow over compact layer.	Shallow over compact layer.
Slow seepage	Moderate or low strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Easy to establish vegetation.
Slow seepage	Low strength and stability.	Surface drainage only is needed.	Moderate infiltration; very slow permeability; moderately high available water capacity.	Not needed	Not needed.
Slow seepage	Low strength and stability.	Slow permeability; suitable for open-ditch drainage; outlets are scarce in most areas.	Slow infiltration; high available water capacity.	Not needed	Not needed.
Slow seepage	High strength and stability.	Generally not needed.	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Easy to establish vegetation.

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TABLE 6.—*Engineering*

Soil series and map symbol	Suitability for winter grading	Suitability for— Road subgrade	Road fill	Suitability as a source of— Topsoil	Sand	Degree of limitation as disposal fields for septic-tank systems
Greenville (GrA, GrB2, GrC2)	Fair	Fair	Fair	Good	Poor	Slight.
Gullied land (Gu)	(2)	(2)	(2)	(2)	(2)	(2)
Iuka (Iu)	Fair or poor	Fair	Fair	Good	Poor	Severe: moderate absorption rate; high water table.
Lucy (LuA, LuB, LuC, LuE)	Fair	Fair	Fair	Fair	Poor	Slight.
Mantachie (Ma, Mn)	Poor	Poor	Poor	Good	Poor	Severe: moderate absorption rate; high water table; subject to overflow.
Maxton (MxA, MxB)	Good	Good	Good	Good	Good below a depth of 4 feet.	Moderate or severe: subject to occasional overflow.
Ochlockonee (Oc)	Fair	Fair	Fair	Good	Poor	Severe: subject to overflow.
Ocilla (OfA, OfB)	Fair	Good to a depth of 30 inches; fair from 30 to 60 inches.	Good	Fair	Poor	Severe: high water table.
Orangeburg (OrA, OrB2, OrC2)	Good	Good	Good	Good	Good	Slight.
Pansey (Pa)	Poor: some areas are ponded in winter.	Good	Good	Good	Poor	Severe: moderate absorption rate; high water table.
Pelham (Pe)	Poor: some areas are ponded in winter.	Fair	Fair	Poor	Fair	Severe: moderate absorption rate; high water table.
Plummer (Pm)	Poor: water table at the surface in winter.	Good	Good	Fair	Poor	Severe: high water table.
Red Bay (RbA, RbB2, BbC2, RbD2).	Good	Good	Good	Good	Poor	Slight.
Rough broken land (Ro) For interpretations of stony land part of this unit, see Stony land.	Fair	Variable	Variable	Variable	Variable	Variable.
Stony land	Fair	Poor	Poor	Poor	Poor	Variable.
Sunsweet	Fair	Fair	Fair	Fair	Poor	Severe: slow absorption.
Swamp (Sw)	Poor	Poor	Poor	Poor	Poor	Severe.
Tifton (TfA, TfB2, TfC2)	Fair	Fair	Fair	Good	Poor	Slight.

interpretations—Continued

Soil features affecting—					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir area	Embankment				
Moderate or rapid seepage.	High strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Susceptible to caving-type gullies.
(2)	(2)	(2)	(2)	(2)	(2).
Moderate seepage; high water table.	Moderate strength and stability.	Moderate permeability; suitable for open-ditch drainage.	Moderate permeability; moderately high available water capacity.	Not needed	Easy to establish vegetation.
Rapid seepage	High strength and stability.	Not needed	Rapid permeability; low available water capacity.	Not needed; subject to gullying when water is concentrated.	Hard to maintain.
Moderate seepage	Moderate strength and stability.	Generally not needed.	Slow infiltration; moderately high available water capacity.	Not needed	Not needed.
Rapid seepage	Moderate strength and stability.	Not needed	Moderate permeability; moderately high available water capacity.	Terraces easy to establish and maintain.	Easy to establish and maintain vegetation.
Rapid seepage; subject to overflow.	Moderate strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Not needed	Not needed.
Rapid seepage; high water table.	Low strength and stability.	Rapid permeability; unstable ditchbanks.	Rapid infiltration; low available water capacity.	Not needed	Not needed.
Rapid seepage	Moderate strength and stability.	Not needed	Rapid infiltration; low available water capacity.	Easy to build and maintain.	Severe gullying hazard.
Slow seepage; high water table.	Moderate strength and stability.	Moderate or rapid permeability; suitable for open-ditch drainage.	Moderate infiltration; moderately high available water capacity.	Not needed	Not needed.
Slow seepage; high water table.	Low strength and stability.	Rapid permeability; not suitable for drainage.	Rapid infiltration; very low available water capacity.	Not needed	Not needed.
Rapid seepage; high water table.	Low strength and stability.	Rapid permeability; not suitable for drainage.	Rapid infiltration; low available water capacity.	Not needed	Not needed.
Rapid seepage	Moderate strength and stability.	Not needed	Moderate infiltration; low available water capacity.	Easy to build; subject to caving-type gullies.	Subject to severe gullying.
Variable	Variable	Not needed	Variable	Variable	Variable.
Variable	Variable	Not needed	Not suited	Not suited	Not suited.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; shallow soil; low available water capacity.	Shallow over compact layer.	Vegetation difficult to establish.
Variable	Variable	Suitable for open-ditch drainage.	Not needed	Not needed	Not needed.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Easy to establish vegetation.

TABLE 6.—*Engineering*

Soil series and map symbol	Suitability for winter grading	Suitability for—		Suitability as a source of—		Degree of limitation as disposal fields for septic-tank systems
		Road subgrade	Road fill	Topsoil	Sand	
Troup (TrB)	Good	Good	Good	Fair	Fair	Slight
Varina (VaA, VaB2)	Fair	Fair	Fair	Fair	Poor	Severe: slow absorption rate.
Wagram (WaA, WaB, WaC)	Good	Good	Good	Fair	Fair	Slight
Wickham (WcA, WcB)	Fair	Fair	Fair	Good	Good below a depth of 5 feet.	Severe: moderate absorption rate; subject to occasional overflow.
Wicksburg (WeB, WeC2, WeD2). For interpretations of Esto soils in these units, see Esto series.	Poor	Poor	Poor	Poor	Poor	Severe: slow absorption rate.

[1] The properties of the Sandy alluvium part of Bs and the properties of the Stony land part of CtD are too viariable for meaningful interpretations to be made.

lower. Differences caused by the direction of slope are only slight in Houston County and are of minor importance in the development of the soils.

Classification of the Soils

The system of soil classification discussed in this section[5] is that adopted by the Soil Conservation Service as standard for all soil surveys in the United States, effective January 1, 1965. This system has six categories. Beginning with the most inclusive, the categories are the order, the suborder, the great group, the subgroup, the family, and the series. Table 7 gives the classification of the soils of Houston County according to these categories. Placement of some of the series, particularly in families, may change as more precise information becomes available. The table also shows the great soil group classification according to the system formerly used.[6]

Seven of the soil series shown in table 7 had tentative status at the time the report was sent to the printer. They are the Alaga, Ardilla, Cowarts, Dothan, Maxton, Pansey, and Troup series. The soils for which the Grangeburg series in this survey was proposed have been recorrelated into the Ardilla and Dothan series, and the Grangeburg series has been dropped.

[5] UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Survey Staff, SCS. SOIL CLASSIFICATION, A COMPREHENSIVE SYSTEM, 7TH APPROXIMATION. 1960. [Supplement issued in March 1967]

[6] THORP, JAMES, AND SMITH, GUY D. HIGHER CATEGORIES OF SOIL CLASSIFICATION: ORDER, SUBORDER, AND GREAT SOIL GROUPS. Soil Sci. 67: 117–126. 1949.

New soil series are established and concepts of some of the established series, especially the older ones, must be revised in the course of the nationwide soil survey program. A proposed series is given tentative status during the time its concepts are being studied at State, regional, and national levels of responsibility for soil classification.

General Nature of the County

This section gives general facts about Houston County. It briefly discusses climate; geology, topography, and drainage; water and natural resources; and agriculture.

Climate[7]

The climate of Houston County borders on the subtropical.

Summers are usually long; the weather is warm from sometime in April until early in October. There are relatively few breaks in the heat in midsummer. In the average summer, a maximum temperature of 100° F. or higher is recorded on about 3 days, or 1 day in June, 1 day in July, and 1 day in August. Occasionally a temperature of 100° is recorded in September. A temperature of 90° or higher is recorded on an average of 100 days a year, and a temperature of 95° or higher is recorded on an average of 35 days a year.

[7] By A. R. LONG, State climatologist, U.S. Weather Bureau, Montgomery, Ala.

interpretations—Continued

Soil features affecting—					
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions	Waterways
Reservoir area	Embankment				
Rapid seepage	High strength and stability.	Not needed	Rapid infiltration; low available water capacity.	Easy to build; severe gullying hazard when water is concentrated.	Severe gullying hazard.
Slow seepage	High strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build and maintain.	Easy to establish and maintain.
Moderate or rapid seepage.	High strength and stability.	Not needed	Rapid permeability; low available water capacity.	Not needed; subject to gullying when water is concentrated.	Hard to maintain.
Moderate seepage.	High strength and stability.	Not needed	Moderate infiltration; moderately high available water capacity.	Easy to build	Well suited.
Slow seepage	Moderate strength and stability.	Not needed	Rapid infiltration; low available water capacity.	Not needed; subject to gullying when water is concentrated.	Hard to maintain.

[2] No valid interpretations can be made.

Fall is a season of transition. Summery weather persists until early in October. The prewinter cold spells come in November and early in December. Generally, fall is the most pleasant season, especially October and the early part of November. During those months rainfall is light, the percentage of sunshine is high, and extremes in temperature are rare.

Winters are usually mild and relatively short, but in some years the winter is cold. Freezing temperatures occur on an average of 22 days a year. In an average winter, a minimum temperature of 25° F. or lower is recorded on about 4 days a year, and a temperature of 20° or lower is recorded on an average of about once a year. In most years only a trace of snowfall is recorded. Measurable snowfall or periods when the snow cover lasts more than 1 day are rare.

Spring is the most changeable season of the year. In March the weather is cold and windy, but in April and May it is generally warm and pleasant. Severe local thunderstorms and tornadoes are most likely to occur in spring. Thunderstorms occur on an average of about 75 to 80 days a year, most frequently in June, July, and August.

The prevailing winds are from the southwest. Wind movement is usually light. Strong winds seldom last long at a time, and dangerous winds are rare. The average speed of the wind is 7.8 miles per hour. In March, which is the windiest month, the average windspeed is 10 miles per hour. In August, which is the least windy, the average windspeed is 5.8 miles per hour.

The average relative humidity for the year is 75 percent. In spring it is 69 percent; in summer, 77 percent; in fall, 74 percent; and in winter, 77 percent.

In an average year, about 73 days have 0.1 inch or more of rain, 35 days have 0.5 inch or more, and 16 days have 1 inch or more. The total annual rainfall varies: in 1929 it was 80.04; in 1954 it was 28.96.

For the year as a whole, the sun shines during about 64 percent of the daylight hours. The range is from a minimum average of 48 percent in December to a maximum average of 73 percent in May.

Table 8 shows, by months, the average daily maximum temperature, the average daily minimum temperature, and the average precipitation. Table 9 shows the probabilities of the last low temperatures in spring and the first in fall.

The most disastrous drought[8] in Alabama since records were started nearly 100 years ago, occurred in 1954. Less severe droughts occur once or twice every ten years. By definition, a drought occurs when the soils hold no water available to plants. The frequency and severity of drought depend on the capacity of the soil to hold available moisture, on the amount and distribution of precipitation, and on the amount of water used or transpired by the plants. Even in a normal year, there are periods when rainfall does not supply as much water as is needed by most crops. Consequently, supplementary irrigation is needed in most years for maximum

[8] WARD, H. S., and others. AGRICULTURAL DROUGHT IN ALABAMA. Ala. Polytech. Inst. Bul. 316, Auburn, Ala., 53 pp. illus. September 1959.

TABLE 7.—*Classification of soils in Houston County*

Series	Family	Subgroup and great group	Suborder	Order	Great soil group (1938 classification)
Alaga	Siliceous, acid, thermic, coated.	Typic Quarzipsamment	Psamment	Entisol	Regosol.
Americus	Coarse loamy, siliceous, thermic.	Humic Psammentic Paleudult.	Udult	Ultisol	Red-Yellow Podzolic intergrading to Reddish-Brown Lateritic.
Ardilla	Fine loamy, siliceous, thermic.	Plinthaquic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Bibb	Coarse loamy, siliceous, acid, thermic.	Typic Haplaquept	Aquept	Entisol	Low-Humic Gley.
Bladen	Clayey, mixed, thermic	Typic Ochraquult	Aquult	Ultisol	Low-Humic Gley.
Buncombe	Siliceous, acid, thermic	Typic Udipsamment	Fluvent	Entisol	Alluvial.
Carnegie	Fine loamy, siliceous, thermic.	Plinthic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Cowarts	Fine loamy, siliceous, thermic.	Plinthic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Dothan	Fine loamy, siliceous, thermic.	Plinthic Fragiudult	Udult	Ultisol	Red-Yellow Podzolic.
Dunbar	Clayey, kaolinitic, thermic	Aquic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Esto	Clayey, kaolinitic, thermic	Typic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Faceville	Clayey, kaolinitic, thermic	Typic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Flint	Clayey, mixed, thermic	Aquic Hapludult	Udult	Ultisol	Red-Yellow Podzolic.
Grady	Clayey, kaolinitic, thermic	Typic Ochraquult	Aquult	Ultisol	Low-Humic Gley.
Grangeburg [1]	Fine loamy, siliceous, thermic.	Plinthaquic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Greenville	Clayey, kaolinitic, thermic	Humic Paleudult	Udult	Ultisol	Reddish-Brown Lateritic.
Iuka	Coarse loamy, siliceous, acid, thermic.	Aquic Udifluvent	Fluvent	Entisol	Alluvial.
Lucy	Loamy, siliceous, thermic	Arenic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Mantachie	Fine loamy, siliceous, acid, thermic.	Aeric Haplaquept	Aquept	Inceptisol	Alluvial.
Maxton	Fine loamy, siliceous, thermic.	Typic Hapludult	Udult	Ultisol	Red-Yellow Podzolic.
Ochlockonee	Coarse loamy, siliceous, acid, thermic.	Typic Udifluvent	Orthent	Entisol	Alluvial.
Ocilla	Loamy, siliceous, thermic	Aquic Arenic Paleudult	Udult	Ultisol	Regosol.
Orangeburg	Fine loamy, siliceous, thermic.	Typic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Pansey	Fine loamy, siliceous, thermic.	Plinthic Fragiaquult	Aquult	Ultisol	Low-Humic Gley.
Pelham	Loamy, siliceous, thermic	Arenic Ochraquult	Aquult	Ultisol	Low-Humic Gley.
Plummer	Loamy, siliceous, thermic	Grossarenic Ochraquult	Aquult	Ultisol	Low-Humic Gley.
Red Bay	Fine loamy, siliceous, thermic.	Humic Paleudult	Udult	Ultisol	Reddish-Brown Lateritic.
Sunsweet	Clayey, kaolinitic, thermic	Plinthic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Tifton	Fine loamy, siliceous, thermic.	Plinthic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Troup	Loamy, siliceous, thermic	Grossarenic Paleudult	Udult	Ultisol	Regosol.
Varina	Clayey, kaolinitic, thermic	Plinthic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Wagram	Loamy, siliceous, thermic	Arenic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Wickham	Fine loamy, siliceous, thermic.	Typic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.
Wicksburg	Clayey, mixed, thermic	Arenic Paleudult	Udult	Ultisol	Red-Yellow Podzolic.

[1] The soils for which the Grangeburg series was proposed have been recorrelated subsequent to completion of the soil survey for Houston County and placed in the Ardilla and Dothan series, and the Grangeburg series has been dropped. The wetter part of the soils identified as the Grangeburg series in this survey will be included in the Ardilla series, and the better drained part will be included in the Dothan series.

crop production. During a severe drought, however, the supply of water for irrigation is generally limited or nonexistent.

Table 10 gives the probable number of drought days in each month from February through December for soils of four different moisture-storage capacities. These estimates were obtained by using the Penman method of computing evapotranspiration and by defining a drought day as a day during which no moisture is available to plants.

The total possible amount of stored moisture available to plants varies as the result of differences in the soils and in the depth of the root zone needed by the plants to be grown. For example, for a soil that has a storage capacity of 2 inches, the chances are fifty-fifty that there will be 14 drought days in June.

Evapotranspiration is the removal of water from the soil by evaporation and plant transpiration. The rate of evapotranspiration is highest in summer and lowest in winter. The following gives the average daily rates

TABLE 8.—*Temperature and precipitation data*

[All data based on records from Dothan, Ala.]

Month	Temperature				Precipitation		
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—	
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—
	°F.	°F.	°F.	°F.	Inches	Inches	Inches
January	62	40	76	25	4.2	1.3	7.1
February	66	44	80	28	4.7	1.6	9.2
March	70	48	83	33	6.0	2.4	11.5
April	79	55	88	43	4.5	1.1	8.0
May	87	63	95	52	3.1	.9	5.2
June	91	70	98	63	4.5	1.8	7.2
July	92	71	97	68	5.9	2.4	9.8
August	92	71	98	66	4.9	2.2	7.2
September	87	67	95	57	5.2	2.3	9.2
October	80	56	88	42	2.0	.5	3.4
November	70	45	82	31	3.2	.7	6.6
December	62	41	77	28	4.4	2.0	9.0
Year	78	56	[1] 100	[2] 19	52.6	37.2	68.6

[1] Average annual highest temperature.

[2] Average annual lowest temperature.

TABLE 9.—*Probabilities of latest low temperature in spring and earliest in fall*

[All data based on records from Dothan, Ala.]

Probability	Dates for given probability and temperature						
	40° F. or less	36° F. or less	32° F. or less	28° F. or less	24° F. or less	20° F. or less	16° F. or less
Spring:							
1 year in 10 later than	April 16	April 10	March 26	March 5	March 4	February 16	February 7
2 years in 10 later than	April 14	April 6	March 19	March 3	February 22	February 9	January 22
5 years in 10 later than	April 2	March 22	March 2	February 11	January 14	[1]	[1]
Fall:							
1 year in 10 earlier than	October 19	October 28	November 4	November 16	[1]	[1]	[1]
2 years in 10 earlier than	October 26	October 30	November 8	November 20	[1]	[1]	[1]
5 years in 10 earlier than	October 30	November 7	November 25	December 1	December 12	[1]	[1]

[1] Data not available.

of evapotranspiration for each month of the year, in inches of water lost:

Month	*Inches*	*Month*	*Inches*
January	0.041	July	0.162
February	.066	August	.158
March	.086	September	.134
April	.130	October	.100
May	.160	November	.060
June	.185	December	.038

Geology, Topography, and Drainage

Houston County lies wholly within the Coastal Plain Province, a major physiographic division of the United States. The Coastal Plain is a broad belt consisting mainly of unconsolidated sands, silts, and clays that were deposited by sea water before the shoreline of the continental United States reached its present position.

Most of the county is underlain by jumbled beds of mixed sediments, consisting primarily of clay, sand, and weathered limestone of upper Eocene, Oligocene, and Miocene age. The mixed condition of these sediments was caused by the solution of limestone and the slumping or caving of overlying blocks of limestone and other material into the openings or sinkholes caused by solution. There are outcrops of the Tallahatta and Lisbon formations in the watersheds of the Little Choctawhatchee River and of Omusee Creek.

The topography of Houston County is mainly level to gently sloping. There are many broad ridges that

TABLE 10.—*Probable number of drought days for soils of four different moisture-storage capacities*

Probability by month [1]	Probable number of drought days [2] if a soil has a moisture-storage capacity [3] of—			
	1 inch	2 inches	3 inches	5 inches
February				
1 in 10	7	0	0	0
2 in 10	5	0	0	0
3 in 10	3	0	0	0
5 in 10	1	0	0	0
March				
1 in 10	8	0	0	0
2 in 10	6	0	0	0
3 in 10	4	0	0	0
5 in 10	1	0	0	0
April				
1 in 10	17	10	0	0
2 in 10	13	7	0	0
3 in 10	11	4	0	0
5 in 10	8	1	0	0
May				
1 in 10	26	25	24	11
2 in 10	23	20	18	4
3 in 10	20	17	12	0
5 in 10	17	11	3	0
June				
1 in 10	25	24	24	21
2 in 10	23	21	21	17
3 in 10	21	19	18	13
5 in 10	17	14	12	3
July				
1 in 10	19	16	16	15
2 in 10	16	15	14	10
3 in 10	13	9	9	7
5 in 10	9	5	4	2
August				
1 in 10	19	15	11	10
2 in 10	16	11	6	4
3 in 10	14	8	3	0
5 in 10	10	4	0	0
September				
1 in 10	27	26	24	16
2 in 10	21	18	15	9
3 in 10	18	14	10	4
5 in 10	14	9	5	0
October				
1 in 10	28	27	26	24
2 in 10	26	25	22	18
3 in 10	24	21	18	10
5 in 10	21	15	10	0

TABLE 10.—*Probable number of drought days for soils of four different moisture-storage capacities*—Continued

Probability by month [1]	Probable number of drought days [2] if a soil has a moisture-storage capacity [3] of—			
	1 inch	2 inches	3 inches	5 inches
November				
1 in 10	23	22	22	21
2 in 10	20	19	18	15
3 in 10	17	16	15	10
5 in 10	12	9	8	0
December				
1 in 10	10	6	6	2
2 in 10	5	0	0	0
3 in 10	2	0	0	0
5 in 10	0	0	0	0

[1] The month of January is not shown, because crops are rarely damaged by drought in this month.

[2] A drought day is a day during which no water is available to plants.

[3] The moisture-storage capacity of soils is expressed as the amount of water that a soil can hold and make available to plants.

have nearly level tops and long, gentle side slopes, and there are several lower lying flats. The southeastern corner of the county, an area lying east of Cowarts Creek and south of U.S. Highway 84, is a level to gently undulating sandy area having an elevation of 150 to about 200 feet.

Terraces along the Chattahooche and Little Choctawhatchee Rivers are nearly level and about half a mile wide. The soils on these terraces consist mainly of material washed from uplands of the Coastal Plain. Some of the soils on terraces of the Chattahoochee River have been influenced by material washed from the adjoining Piedmont province. Most of these soils contain many fine flakes of mica.

Most of Houston County has a fairly well developed branching, or dendritic, drainage system. Most of the larger creeks are shallow and sluggish. They meander slowly through fairly wide, poorly drained bottom lands. Omusee Creek and the Little Choctawhatchee River have deeper channels and flow more swiftly. Their streambeds generally pass through the more sloping areas adjoining bottom lands.

The drainage system in the southeastern corner of the county is poorly developed. It consists of large depressions that are ponded for long periods and drain internally through underground channels. There are a few gently flowing surface streams in the southeastern part of the county.

Terraces along the Chattahoochee and Little Choctawhatchee Rivers are drained by several creeks that cross the area and spill into the rivers and by sluggish, intermittent streams that parallel the rivers.

Water and Natural Resources

Most farms in Houston County have adequate surface water for livestock. There are many perennial streams, lakes, and ponds throughout the county, except in the southeastern corner. The water level in the natural

ponds generally fluctuates several feet during the year. Many of the ponds are dry in periods when rainfall is below normal. In the southeastern corner of the county, there are many depressions that fill with water in winter and spring but dry out late in summer and in fall in most years. Many earthfill ponds have been constructed on farms where the supply of surface water is not adequate. These ponds provide water for livestock and water for irrigating crops. Suitable sites for such ponds are plentiful.

All water for home use and industrial use in the county comes from wells. City wells range from 115 to 684 feet in depth and from 4 to 24 inches in diameter. Yield from these wells ranges from 50 to 620 gallons per minute.[9] Several artesian wells, 437 to 4,280 feet deep, have been drilled on terraces of the Chattahoochee and Little Choctawhatchee Rivers and also in the general area between Rehobeth and Cottonwood. The use of well water for irrigation of vegetable crops is increasing.

Other natural resources of the county include sand and gravel and soil material suitable for roadbeds and road fills. There are many deposits of low-quality iron ore in the northeastern part of the county.

Agriculture

The area that is now Houston County was covered by dense forest before it was settled. Longleaf pine grew on the uplands, and gum and other hardwoods on the bottom lands. As the timber was cut, farmers first grew subsistence crops. Cotton was the first cash crop to be grown.

Today, the county is mainly a general farming area, the principal crops being corn, cotton, peanuts, small grain, forage and hay crops, tomatoes, peas, lima beans, watermelons, and leafy vegetables. Raising hogs and raising beef cattle are important farm enterprises. The county has several dairy farms.

The proportion of woodland to cleared land has remained fairly constant for the past 20 years, but individual farms are becoming larger and crops more diversified. The acreage of melons, vegetables, and pasture has increased, and the acreage of general row crops has decreased. Veneer, pulpwood, sawtimber, and naval stores are the main woodland products.

Glossary

Acidity, soil. (See Reaction, soil.)

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available water capacity. The capacity of a soil to hold water in a form available to plants. Amount of moisture held in soil between field capacity, or about one-third atmosphere of tension, and the wilting coefficient, or about 15 atmospheres of tension.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay film. A thin coating of clay on the surface of a soil aggregate. Synonyms: clay coat, clay skin.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors, consisting of concentrations of compounds or of soil grains cemented together. The composition of some concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are examples of material commonly found in concretions.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent; will not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure, but can be pressed into a lump; will form a wire when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Erosion. The wearing away of the land surface by wind, running water, and other geological agents.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Fragipan. A loamy, brittle subsurface horizon that is very low in organic matter and clay but is rich in silt or very fine sand. The layer is seemingly cemented when dry, has a hard or very hard consistence, and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur 15 to 40 inches below the surface.

Gleyed soil. A soil in which waterlogging and lack of oxygen have caused the material in one or more horizons to be neutral gray in color. The term "gleyed" is applied to soil horizons with yellow and gray mottling caused by intermittent waterlogging.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes.

Infiltration. The downward entry of water into the immediate surface of the soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Leached soil. A soil in which most of the soluble materials have been removed from the entire profile or have been removed from one part of the profile and have accumulated in another part.

Marine deposits. Material deposited in the water of oceans and seas and exposed by geological uplift of the land or lowering of the water level.

Mottled. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Natural drainage. Refers to the conditions that existed during the development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven different classes of natural drainage are recognized.

Excessively drained soils are commonly very porous and rapidly permeable and have a low water-holding capacity.

Somewhat excessively drained soils are also very permeable and are free from mottling throughout their profile.

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[9] JONES, WALTER B. WATER RESOURCES AND HYDROLOGY OF SOUTHEASTERN ALABAMA. Ala. Geol. Survey Spec. Rpt. 20, table 28. 1949.

Well-drained soils are nearly free from mottling and are commonly of intermediate texture.

Moderately well drained soils commonly have a slowly permeable layer in or immediately beneath the solum. They have uniform color in the A and upper part of the B horizon and have mottling in the lower part of the B and C horizons.

Somewhat poorly drained soils are wet for significant periods but not all the time, and commonly have mottles below a depth of 6 to 16 inches in the lower part of the A horizon and in the B and C horizons.

Poorly drained soils are wet for long periods and are light gray and generally mottled from the surface downward, although mottling may be absent or nearly so in some soils.

Very poorly drained soils are wet nearly all the time. They have a dark-gray or black surface layer and are gray or light gray, with or without mottles, in the deeper parts of the profile.

Pan. A layer in a soil that is firmly compacted or is very rich in clay. Frequently the word "pan" is combined with other words that more explicitly indicate the nature of the layers; for example, *hardpan, fragipan, claypan,* and *traffic pan.*

Parent material (soil). The horizon of weathered rock or partly weathered soil material from which soil has formed; horizon C in the soil profile.

Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents that commonly shows as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to hardpan or to irregular aggregates upon repeated wetting and drying, or it is the hardened relict of the soft, red mottles. It is a form of laterite.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. The degree of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. In words, the degree of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Mildly alkaline	7.4 to 7.8
Very strongly acid	4.5 to 5.0	Moderately alkaline	7.9 to 8.4
Strongly acid	5.1 to 5.5	Strongly alkaline	8.5 to 9.0
Medium acid	5.6 to 6.0	Very strongly alkaline	9.1 and higher
Slightly acid	6.1 to 6.5		
Neutral	6.6 to 7.3		

Residual material. Unconsolidated, partly weathered minera material that accumulates over disintegrating solid rock. Residual material is not soil but is frequently the material in which a soil forms.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 to 2.0 millimeters in diameter. Most sand grains consist of quartz, but sand may be any mineral composition. As a textural class, soil that is 85 percent or more sand and not more than 10 percent clay.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are (1) *single grain* (each grain by itself, as in dune sand) or (2) *massive* (the particles adhering without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the profile below plow depth.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to overflow. Marine terraces were deposited by the sea and are generally wide.

Texture. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Tilth. The condition of the soil in relation to the growth of plants, especially soil structure. Good tilth refers to the friable state and is associated with high noncapillary porosity and stable, granular structure. A soil in poor tilth is nonfriable, hard, nonaggregated, and difficult to till.

Upland (geologic). Land consisting of material unworked by water in recent geologic time and lying, in general, at a higher elevation than the alluvial plain or stream terrace. Land above the lowlands along rivers.

Accessibility Statement

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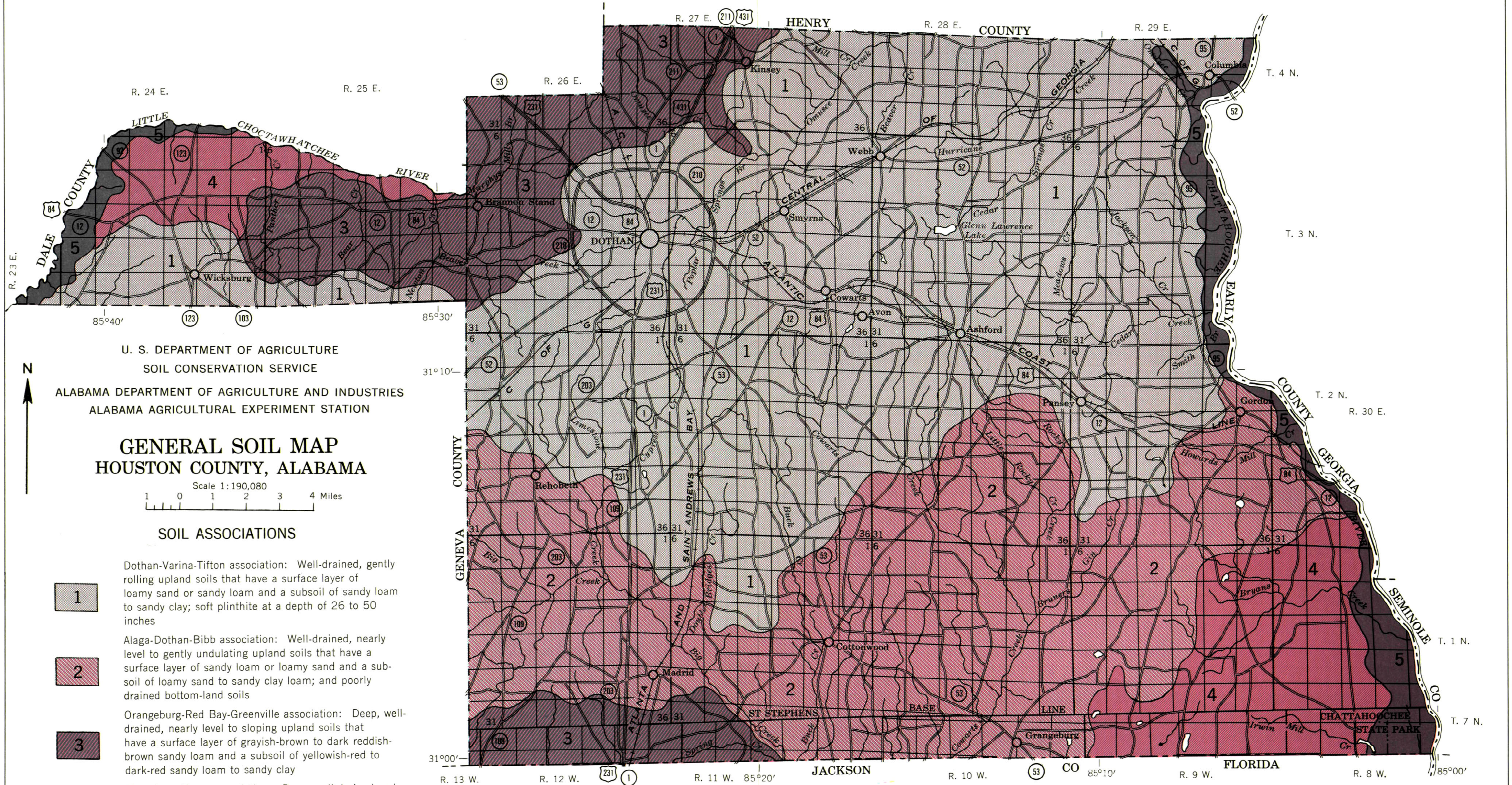


U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES
ALABAMA AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
HOUSTON COUNTY, ALABAMA

Scale 1:190,080

1 0 1 2 3 4 Miles

SOIL ASSOCIATIONS

1 — Dothan-Varina-Tifton association: Well-drained, gently rolling upland soils that have a surface layer of loamy sand or sandy loam and a subsoil of sandy loam to sandy clay; soft plinthite at a depth of 26 to 50 inches

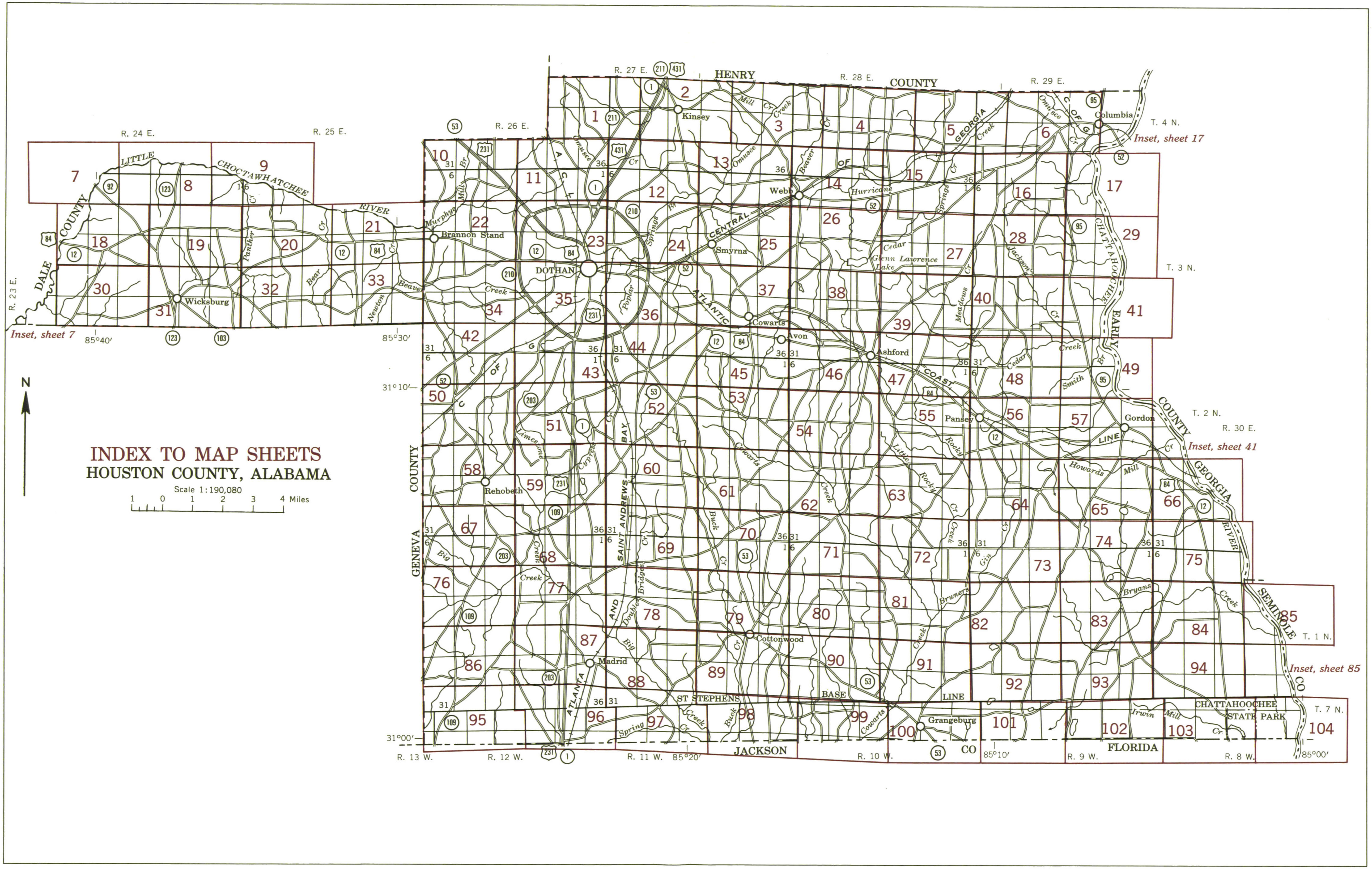
2 — Alaga-Dothan-Bibb association: Well-drained, nearly level to gently undulating upland soils that have a surface layer of sandy loam or loamy sand and a subsoil of loamy sand to sandy clay loam; and poorly drained bottom-land soils

3 — Orangeburg-Red Bay-Greenville association: Deep, well-drained, nearly level to sloping upland soils that have a surface layer of grayish-brown to dark reddish-brown sandy loam and a subsoil of yellowish-red to dark-red sandy loam to sandy clay

4 — Alaga-Lucy-Troup association: Deep, well-drained and somewhat excessively drained, chiefly nearly level and very gently sloping sandy soils of the uplands

5 — Alaga-Flint-Maxton association: Deep, well drained and moderately well drained, chiefly gently undulating soils of stream terraces

December 1966



INDEX TO MAP SHEETS
HOUSTON COUNTY, ALABAMA
Scale 1:190,080
1 0 1 2 3 4 Miles
N
HENRY COUNTY
DALE COUNTY
GENEVA COUNTY
EARLY COUNTY
GEORGIA
SEMINOLE CO
JACKSON CO
FLORIDA
DOTHAN
Kinsey
Columbia
Webb
Brannon Stand
Smyrna
Wicksburg
Cowarts
Avon
Ashford
Pansey
Gordon
Rehobeth
Cottonwood
Madrid
Grangeburg
CHATTAHOOCHEE STATE PARK
Inset, sheet 7
Inset, sheet 17
Inset, sheet 41
Inset, sheet 85
R. 23 E.
R. 24 E.
R. 25 E.
R. 26 E.
R. 27 E.
R. 28 E.
R. 29 E.
R. 30 E.
T. 4 N.
T. 3 N.
T. 2 N.
T. 1 N.
T. 7 N.
R. 13 W.
R. 12 W.
R. 11 W.
R. 10 W.
R. 9 W.
R. 8 W.
85°40′
85°30′
85°20′
85°10′
85°00′
31°10′
31°00′
ST STEPHENS BASE LINE

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, A, B, C, D, or E, shows the slope. Most symbols without a slope letter are those of nearly level soils on flood plains, but some are for land types, such as Gullied land, that have a considerable range in slope. The number 2 or 3 in a symbol indicates that the soil is eroded or severely eroded.

SYMBOL	NAME
AaB	Alaga loamy sand, 0 to 5 percent slopes
AaC	Alaga loamy sand, 5 to 8 percent slopes
AaD	Alaga loamy sand, 8 to 12 percent slopes
AeE2	Alaga and Esto soils, 12 to 17 percent slopes, eroded
AmB	Americus loamy sand, 2 to 5 percent slopes
AmD	Americus loamy sand, 5 to 12 percent slopes
ArA	Ardilla fine sandy loam, 0 to 2 percent slopes
Bb	Bibb and Bladen soils
Bs	Bibb soils and sandy alluvium
Br	Bladen silt loam
Bu	Buncombe loamy sand
CaB2	Carnegie fine sandy loam, 2 to 5 percent slopes, eroded
CaC2	Carnegie fine sandy loam, 5 to 8 percent slopes, eroded
CsB2	Carnegie–Sunsweet complex, 2 to 5 percent slopes, eroded
CsC2	Carnegie–Sunsweet complex, 5 to 8 percent slopes, eroded
CsC3	Carnegie–Sunsweet complex, 5 to 8 percent slopes, severely eroded
CsD2	Carnegie–Sunsweet complex, 8 to 12 percent slopes, eroded
CtD	Carnegie–sunsweet–stony land complex, 5 to 12 percent slopes
CoB2	Cowarts fine sandy loam, 2 to 5 percent slopes, eroded
CoC2	Cowarts fine sandy loam, 5 to 8 percent slopes, eroded
CoC3	Cowarts fine sandy loam, 5 to 8 percent slopes, severely eroded
CoD2	Cowarts fine sandy loam, 8 to 12 percent slopes, eroded
DoA	Dothan loamy sand, 0 to 2 percent slopes
DoB	Dothan loamy sand, 2 to 5 percent slopes
DoB2	Dothan loamy sand, 2 to 5 percent slopes, eroded
DoC2	Dothan loamy sand, 5 to 8 percent slopes, eroded
DuA	Dunbar fine sandy loam, 0 to 2 percent slopes
DuB	Dunbar fine sandy loam, 2 to 5 percent slopes
DvA	Dunbar fine sandy loam, overflow, 0 to 2 percent slopes
EsB	Esto loamy sand, 2 to 5 percent slopes
EsB2	Esto loamy sand, 2 to 5 percent slopes, eroded
EsC2	Esto loamy sand, 5 to 8 percent slopes, eroded
EtD3	Esto soils, 8 to 12 percent slopes, severely eroded
FaA	Faceville fine sandy loam, 0 to 2 percent slopes
FaB2	Faceville fine sandy loam, 2 to 5 percent slopes, eroded
FlA	Flint fine sandy loam, 0 to 2 percent slopes
FlB	Flint fine sandy loam, 2 to 5 percent slopes
Gd	Grady soils
GfA	Grangeburg fine sandy loam, 0 to 2 percent slopes
GfB	Grangeburg fine sandy loam, 2 to 5 percent slopes
GrA	Greenville fine sandy loam, 0 to 2 percent slopes
GrB2	Greenville fine sandy loam, 2 to 5 percent slopes, eroded
GrC2	Greenville fine sandy loam, 5 to 8 percent slopes, eroded
Gu	Gullied land
Iu	Iuka soils, local alluvium
LuA	Lucy loamy sand, 0 to 2 percent slopes
LuB	Lucy loamy sand, 2 to 5 percent slopes
LuC	Lucy loamy sand, 5 to 8 percent slopes
LuE	Lucy loamy sand, 8 to 17 percent slopes
Ma	Mantachie soils
Mn	Mantachie soils, local alluvium
MxA	Maxton fine sandy loam, 0 to 2 percent slopes
MxB	Maxton fine sandy loam, 2 to 5 percent slopes
Oc	Ochlockonee soils
OfA	Ocilla loamy fine sand, 0 to 2 percent slopes
OfB	Ocilla loamy fine sand, 2 to 5 percent slopes
OrA	Orangeburg sandy loam, 0 to 2 percent slopes
OrB2	Orangeburg sandy loam, 2 to 5 percent slopes, eroded
OrC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded
Pa	Pansey fine sandy loam
Pe	Pelham sand
Pm	Plummer loamy sand
RbA	Red Bay sandy loam, 0 to 2 percent slopes
RbB2	Red Bay sandy loam, 2 to 5 percent slopes, eroded
RbC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded
RbD2	Red Bay sandy loam, 8 to 12 percent slopes, eroded
Ro	Rough broken and stony land
Sw	Swamp
TfA	Tifton fine sandy loam, 0 to 2 percent slopes
TfB2	Tifton fine sandy loam, 2 to 5 percent slopes, eroded
TfC2	Tifton fine sandy loam, 5 to 8 percent slopes, eroded
TrB	Troup loamy sand, 0 to 5 percent slopes
VaA	Varina fine sandy loam, 0 to 2 percent slopes
VaB2	Varina fine sandy loam, 2 to 5 percent slopes, eroded
WaA	Wagram loamy sand, 0 to 2 percent slopes
WaB	Wagram loamy sand, 2 to 5 percent slopes
WaC	Wagram loamy sand, 5 to 8 percent slopes
WcA	Wickham fine sandy loam, 0 to 2 percent slopes
WcB	Wickham fine sandy loam, 2 to 5 percent slopes
WeB	Wicksburg–Esto complex, 2 to 5 percent slopes
WeC2	Wicksburg–Esto complex, 5 to 8 percent slopes, eroded
WeD2	Wicksburg–Esto complex, 8 to 12 percent slopes, eroded

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads
- Dual
- Good motor
- Poor motor
- Trail

Highway markers
- National Interstate
- U. S.
- State or county

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail, foot
- Railroad
- Ferry — FY
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

Buildings
- School
- Church

Forest fire or lookout station

Mines and Quarries

Mine dump

Pits, gravel, sand, or clay

Power line

Pipeline

Cemetery

Dams

Levee

Tanks

Well, oil or gas

BOUNDARIES

- National or state
- County
- Township or range, U. S.
- Section line, corner, U. S.
- Reservation
- Land grant
- Small park, cemetery, airport

DRAINAGE

Streams
- Perennial
- Intermittent, unclassified
- Crossable with tillage implements

Canals and ditches — CANAL — DITCH

Lakes and ponds
- Perennial
- Intermittent

Wells, water — flowing

Springs

Marsh

Wet spot

Alluvial fan

Drainage end

RELIEF

Escarpments
- Bedrock
- Other

Prominent peak

Depressions — Large — Small
- Crossable with tillage implements
- Not crossable with tillage implements
- Contains water most of the time

SOIL SURVEY DATA

- Soil boundary and symbol — Dx
- Gravel
- Stones
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land
- Severely eroded spot
- Blowout, wind erosion
- Gully

Soil map constructed 1966 by Cartographic Division, Soil Conservation Service, USDA, from 1961 aerial photographs. Controlled mosaic based on Alabama plane coordinate system, east zone, transverse Mercator projection, 1927 North American datum.

GUIDE TO MAPPING UNITS

[For a full description of a mapping unit, read both the description of the mapping unit and the description of the soil series to which the mapping unit belongs.

[Table 1, page 6, gives the approximate acreage and proportionate extent of the soils. Table 2, page 46, gives predicted yields of principal crops. Table 4, page 52, table 5, page 58, and table 6, page 62, give information significant to engineering]

Map symbol	Mapping unit	Described on page	Capability unit		Woodland group	
			Symbol	Page	Number	Page
AaB	Alaga loamy sand, 0 to 5 percent slopes	6	IIIs-11	42	C-1	45
AaC	Alaga loamy sand, 5 to 8 percent slopes	7	IVs-11	43	C-1	45
AaD	Alaga loamy sand, 8 to 12 percent slopes	7	VIs-11	43	C-1	45
AeE2	Alaga and Esto soils, 12 to 17 percent slopes, eroded	7	VIIe-11	43	C-5	50
AmB	Americus loamy sand, 2 to 5 percent slopes	7	IIIs-11	42	C-1	45
AmD	Americus loamy sand, 5 to 12 percent slopes	7	IVs-11	43	C-1	45
ArA	Ardilla fine sandy loam, 0 to 2 percent slopes	8	IIw-17	40	C-4	49
Bb	Bibb and Bladen soils	9	IVw-11	43	C-2	45
Bs	Bibb soils and sandy alluvium	9	IVw-11	43	C-7	50
Bt	Bladen silt loam	10	IVw-11	43	C-2	45
Bu	Buncombe loamy sand	10	IIIs-11	42	C-6	50
CaB2	Carnegie fine sandy loam, 2 to 5 percent slopes, eroded	11	IIIe-19	41	C-3	48
CaC2	Carnegie fine sandy loam, 5 to 8 percent slopes, eroded	11	IVe-19	42	C-3	48
CsB2	Carnegie-Sunsweet complex, 2 to 5 percent slopes, eroded	11	IIIe-19	41	C-5	50
CsC2	Carnegie-Sunsweet complex, 5 to 8 percent slopes, eroded	12	IVe-19	42	C-5	50
CsC3	Carnegie-Sunsweet complex, 5 to 8 percent slopes, severely eroded	12	VIe-19	43	C-5	50
CsD2	Carnegie-Sunsweet complex, 8 to 12 percent slopes, eroded	12	VIe-19	43	C-5	50
CtD	Carnegie-Sunsweet-stony land complex, 5 to 12 percent slopes	12	VIIe-19	43	C-8	51
CoB2	Cowarts fine sandy loam, 2 to 5 percent slopes, eroded	13	IIIe-19	41	C-5	50
CoC2	Cowarts fine sandy loam, 5 to 8 percent slopes, eroded	13	IVe-19	42	C-5	50
CoC3	Cowarts fine sandy loam, 5 to 8 percent slopes, severely eroded	14	VIe-19	43	C-5	50
CoD2	Cowarts fine sandy loam, 8 to 12 percent slopes, eroded	14	VIe-19	43	C-5	50
DoA	Dothan loamy sand, 0 to 2 percent slopes	14	I-12	38	C-3	48
DoB	Dothan loamy sand, 2 to 5 percent slopes	15	IIe-12	39	C-3	48
DoB2	Dothan loamy sand, 2 to 5 percent slopes, eroded	15	IIe-12	39	C-3	48
DoC2	Dothan loamy sand, 5 to 8 percent slopes, eroded	15	IIIe-12	41	C-3	48
DuA	Dunbar fine sandy loam, 0 to 2 percent slopes	16	IIw-17	40	C-4	49
DuB	Dunbar fine sandy loam, 2 to 5 percent slopes	16	IIe-16	39	C-4	49
DvA	Dunbar fine sandy loam, overflow, 0 to 2 percent slopes	16	IIw-17	40	C-9	51
EsB	Esto loamy sand, 2 to 5 percent slopes	17	IIIe-19	41	C-5	50
EsB2	Esto loamy sand, 2 to 5 percent slopes, eroded	17	IIIe-19	41	C-5	50
EsC2	Esto loamy sand, 5 to 8 percent slopes, eroded	17	VIe-19	43	C-5	50
EtD3	Esto soils, 8 to 12 percent slopes, severely eroded	17	VIIe-19	43	C-5	50
FaA	Faceville fine sandy loam, 0 to 2 percent slopes	18	I-11	38	C-3	48
FaB2	Faceville fine sandy loam, 2 to 5 percent slopes, eroded	18	IIe-11	39	C-3	48
FlA	Flint fine sandy loam, 0 to 2 percent slopes	19	IIw-17	40	C-9	51
FlB	Flint fine sandy loam, 2 to 5 percent slopes	19	IIe-16	39	C-9	51
Gd	Grady soils	20	IIIw-11	41	C-2	45
GfA	Grangeburg fine sandy loam, 0 to 2 percent slopes	20	IIw-17	40	C-3	48
GfB	Grangeburg fine sandy loam, 2 to 5 percent slopes	21	IIe-16	39	C-3	48
GrA	Greenville fine sandy loam, 0 to 2 percent slopes	21	I-11	38	C-3	48
GrB2	Greenville fine sandy loam, 2 to 5 percent slopes, eroded	22	IIe-11	39	C-3	48
GrC2	Greenville fine sandy loam, 5 to 8 percent slopes, eroded	22	IIIe-11	41	C-3	48
Gu	Gullied land	22	VIIe-19	43	C-8	51
Iu	Iuka soils, local alluvium	23	IIw-11	39	C-6	50
LuA	Lucy loamy sand, 0 to 2 percent slopes	23	IIs-12	40	C-3	48
LuB	Lucy loamy sand, 2 to 5 percent slopes	23	IIs-12	40	C-3	48
LuC	Lucy loamy sand, 5 to 8 percent slopes	24	IIIs-17	42	C-3	48
LuE	Lucy loamy sand, 8 to 17 percent slopes	24	VIs-11	43	C-1	45
Ma	Mantachie soils	24	IVw-11	43	C-7	50
Mn	Mantachie soils, local alluvium	24	IIIw-11	41	C-7	50
MxA	Maxton fine sandy loam, 0 to 2 percent slopes	25	I-12	38	C-3	48
MxB	Maxton fine sandy loam, 2 to 5 percent slopes	25	IIe-12	39	C-3	48
Oc	Ochlockonee soils	26	IIw-11	39	C-6	50
OfA	Ocilla loamy fine sand, 0 to 2 percent slopes	27	IIIw-14	41	C-10	51
OfB	Ocilla loamy fine sand, 2 to 5 percent slopes	27	IIIs-11	42	C-10	51
OrA	Orangeburg sandy loam, 0 to 2 percent slopes	27	I-12	38	C-3	48
OrB2	Orangeburg sandy loam, 2 to 5 percent slopes, eroded	28	IIe-12	39	C-3	48
OrC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	28	IIIe-12	41	C-3	48
Pa	Pansey fine sandy loam	28	IVw-11	43	C-2	45
Pe	Pelham sand	29	IVw-11	43	C-2	45
Pm	Plummer loamy sand	30	Vw-11	43	C-2	45
RbA	Red Bay sandy loam, 0 to 2 percent slopes	30	I-12	38	C-3	48
RbB2	Red Bay sandy loam, 2 to 5 percent slopes, eroded	30	IIe-12	39	C-3	48
RbC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	30	IIIe-12	41	C-3	48
RbD2	Red Bay sandy loam, 8 to 12 percent slopes, eroded	31	IVe-19	42	C-3	48
Ro	Rough broken and stony land	31	VIIe-19	43	C-8	51
Sw	Swamp	32	VIIw-11	44	C-8	51
TfA	Tifton fine sandy loam, 0 to 2 percent slopes	32	I-11	38	C-3	48
TfB2	Tifton fine sandy loam, 2 to 5 percent slopes, eroded	33	IIe-11	39	C-3	48
TfC2	Tifton fine sandy loam, 5 to 8 percent slopes, eroded	33	IIIe-11	41	C-3	48
TrB	Troup loamy sand, 0 to 5 percent slopes	33	IIIs-11	42	C-1	45
VaA	Varina fine sandy loam, 0 to 2 percent slopes	34	I-11	38	C-3	48
VaB2	Varina fine sandy loam, 2 to 5 percent slopes, eroded	34	IIe-11	39	C-3	48
WaA	Wagram loamy sand, 0 to 2 percent slopes	35	IIs-12	40	C-3	48
WaB	Wagram loamy sand, 2 to 5 percent slopes	35	IIs-12	40	C-3	48
WaC	Wagram loamy sand, 5 to 8 percent slopes	35	IIIs-17	42	C-3	48
WcA	Wickham fine sandy loam, 0 to 2 percent slopes	36	I-11	38	C-3	48
WcB	Wickham fine sandy loam, 2 to 5 percent slopes	36	IIe-11	39	C-3	48
WeB	Wicksburg-Esto complex, 2 to 5 percent slopes	37	IVs-11	43	C-5	50
WeC2	Wicksburg-Esto complex, 5 to 8 percent slopes, eroded	37	IVs-11	43	C-5	50
WeD2	Wicksburg-Esto complex, 8 to 12 percent slopes, eroded	37	IVs-11	43	C-5	50

248-637 O - 68 (Face p. 72)

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

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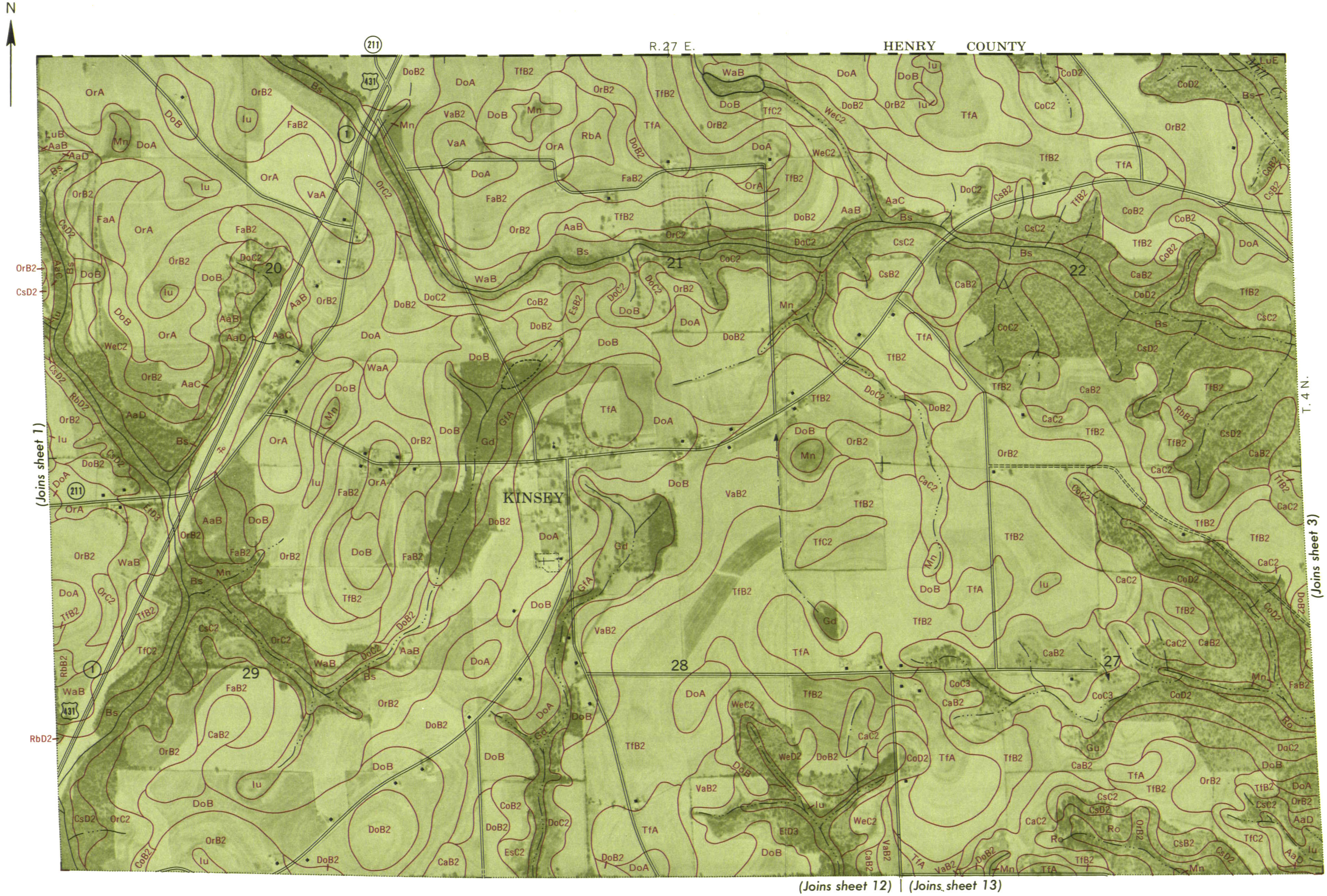
HOUSTON COUNTY, ALABAMA — SHEET NUMBER 2



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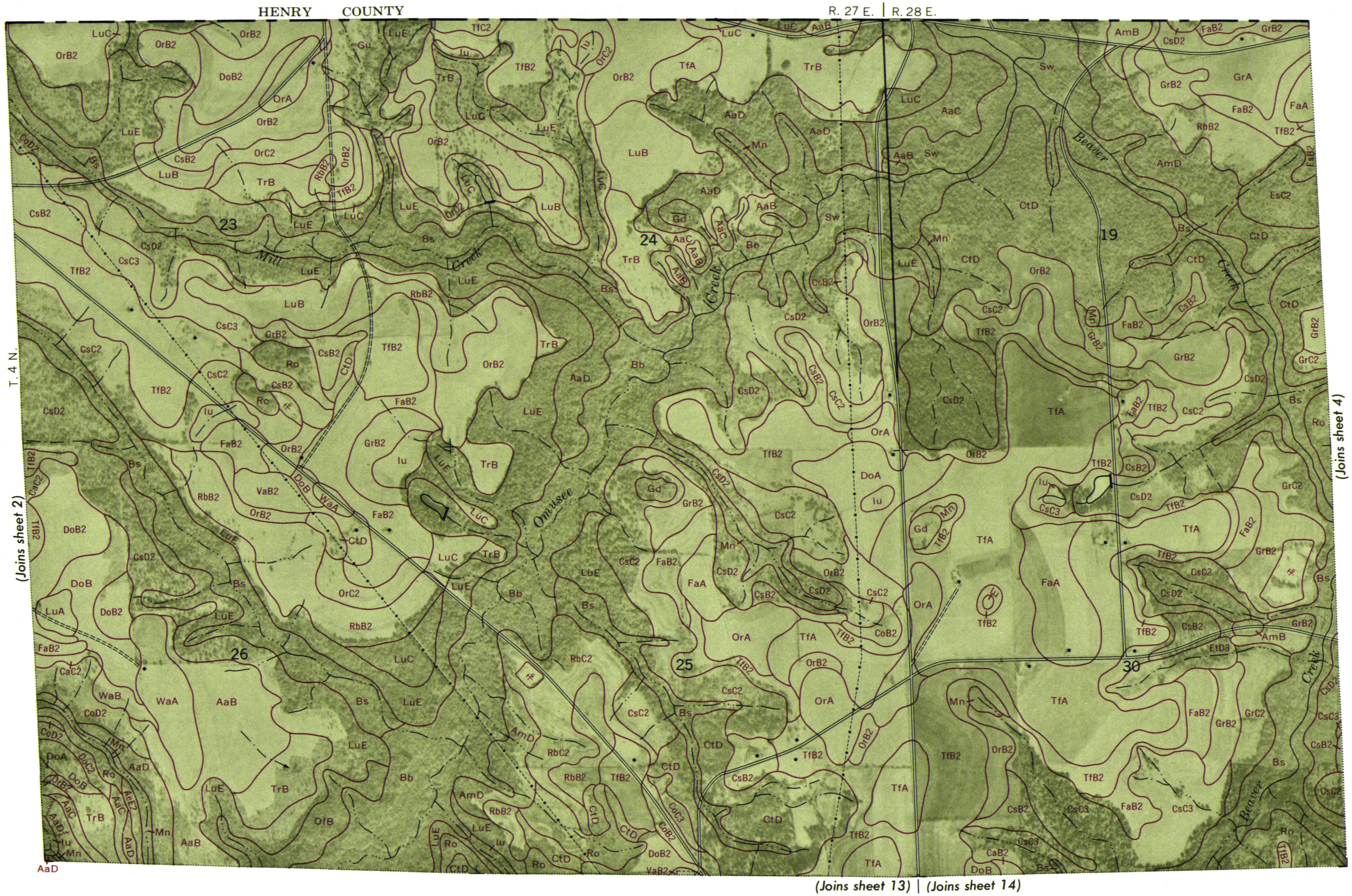

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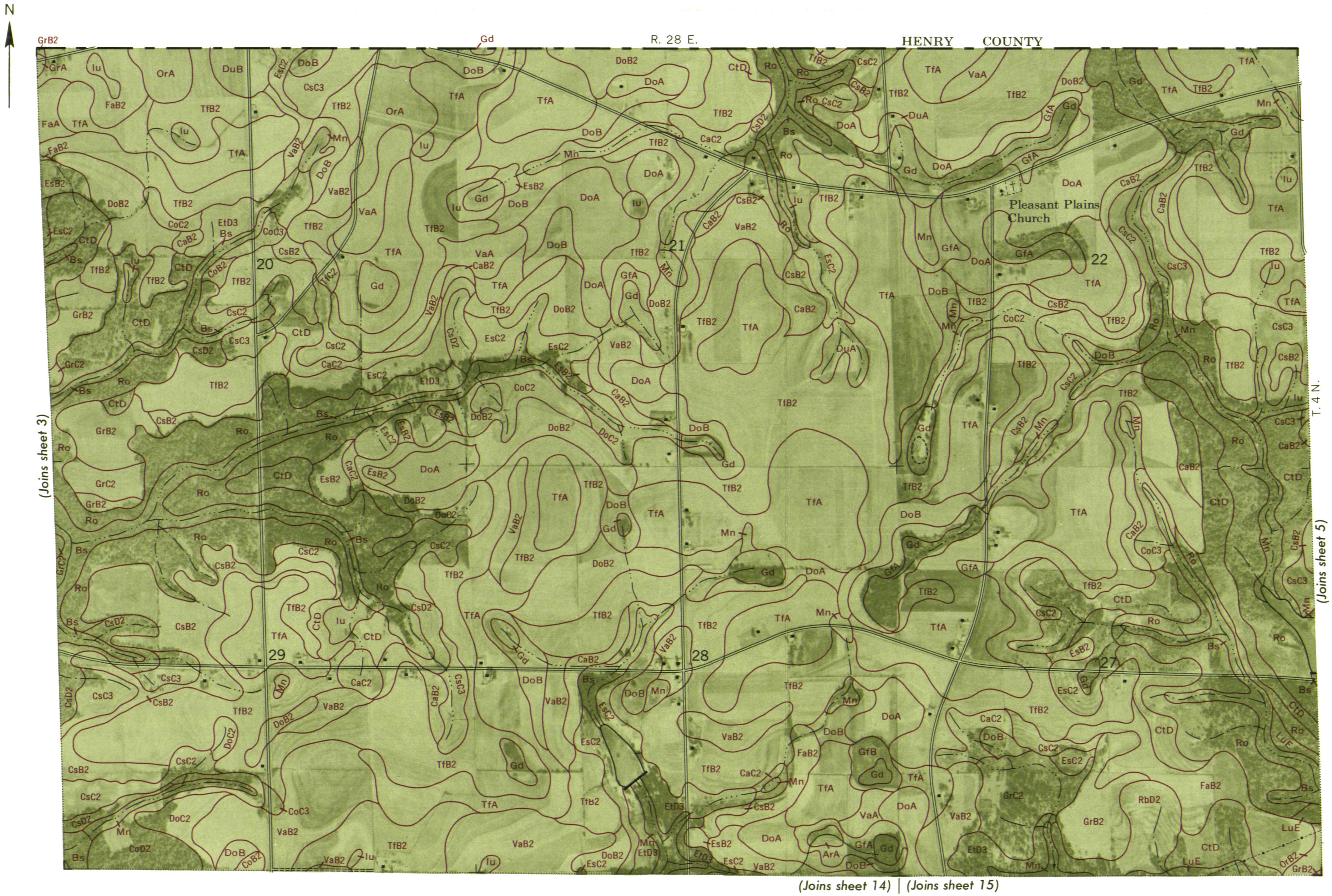
HOUSTON COUNTY, ALABAMA — SHEET NUMBER 4



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HOUSTON COUNTY, ALABAMA — SHEET NUMBER 6

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0 ½ Mile Scale 1:15840 0 3000 Feet

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0 ½ Mile Scale 1:15840 0 3000 Feet

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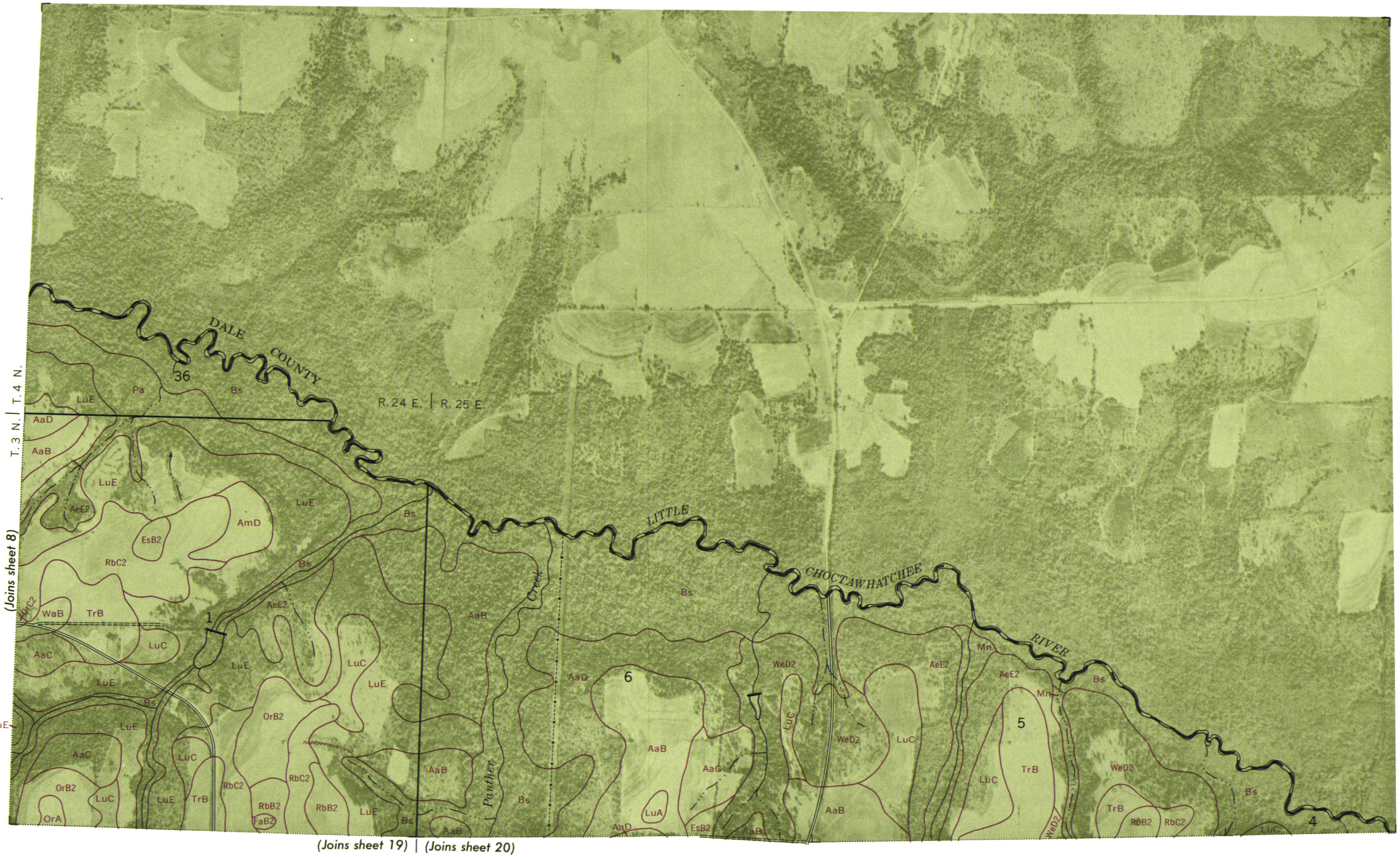

0 — ½ Mile   Scale 1:15840   0 — 3000 Feet

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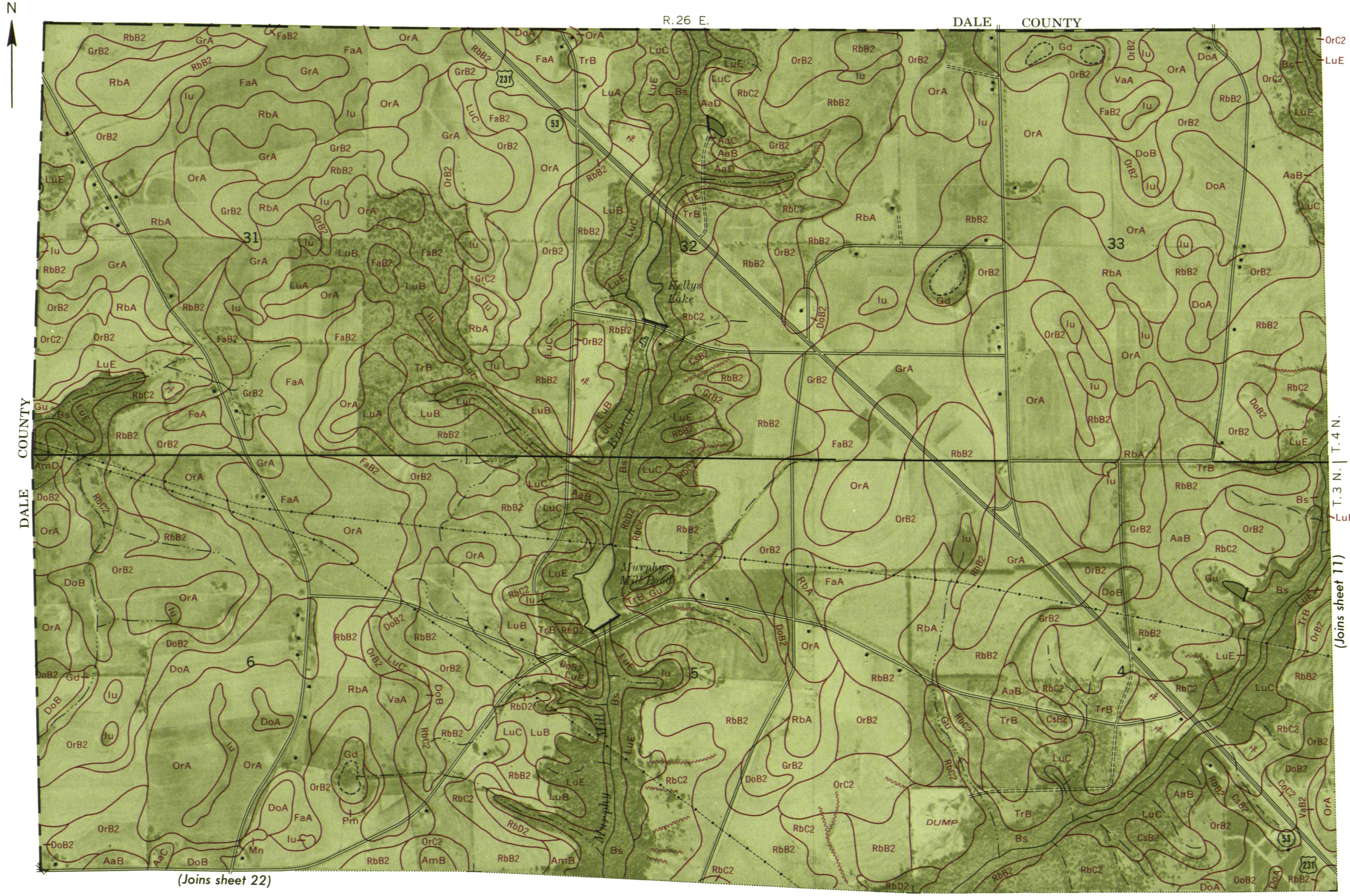

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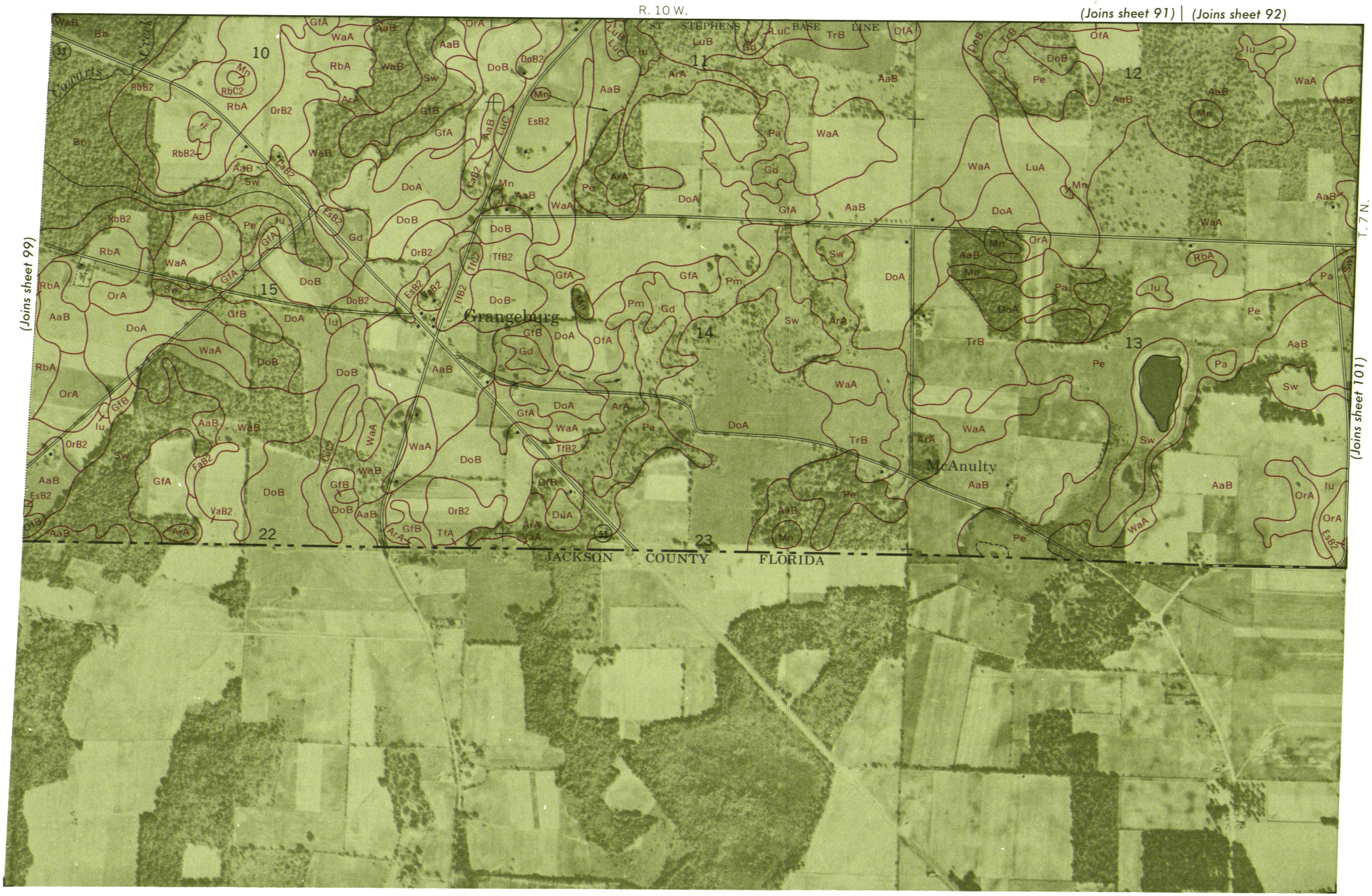

0 ½ Mile Scale 1:15840 0 3000 Feet

N

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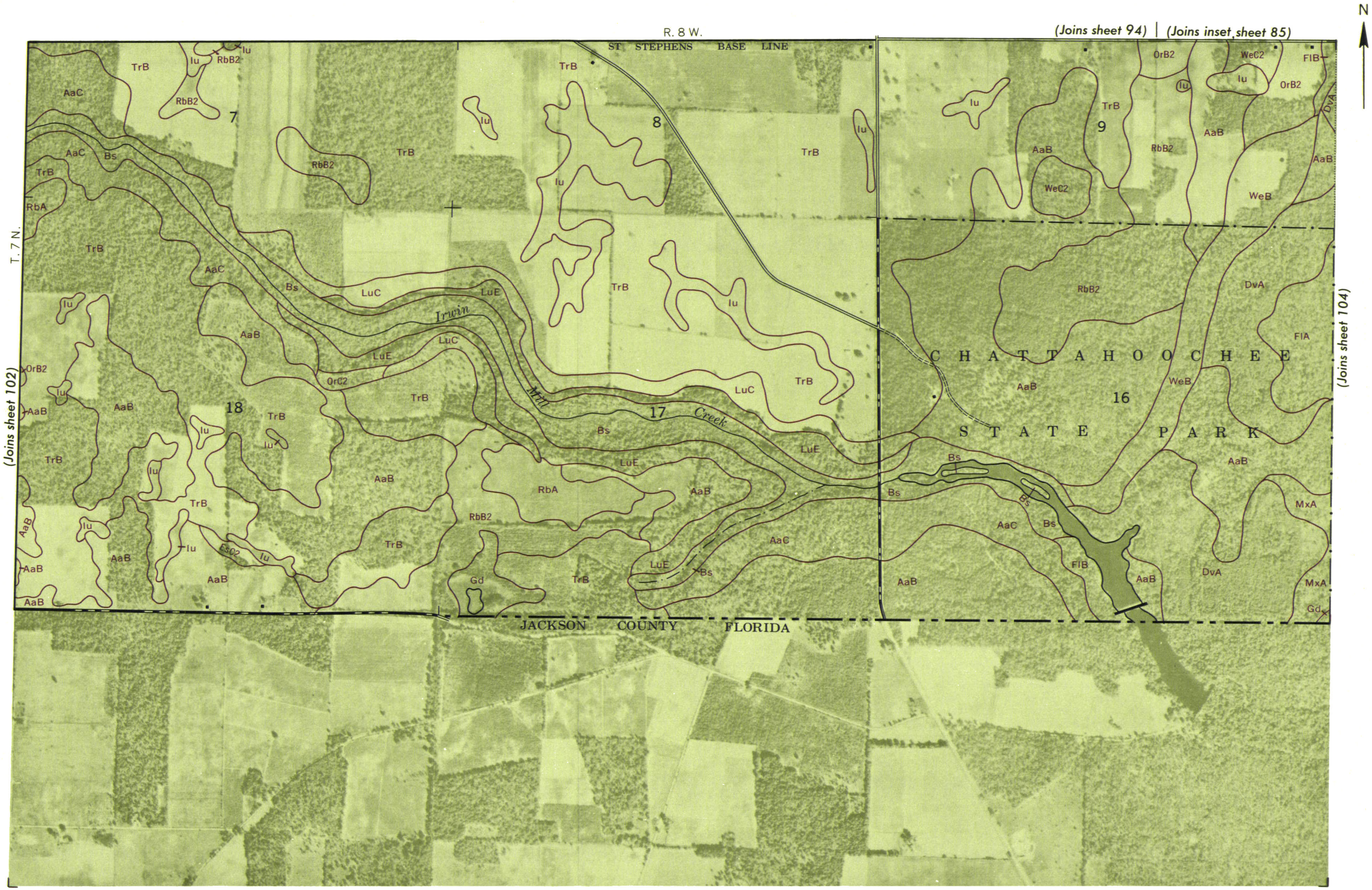
Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

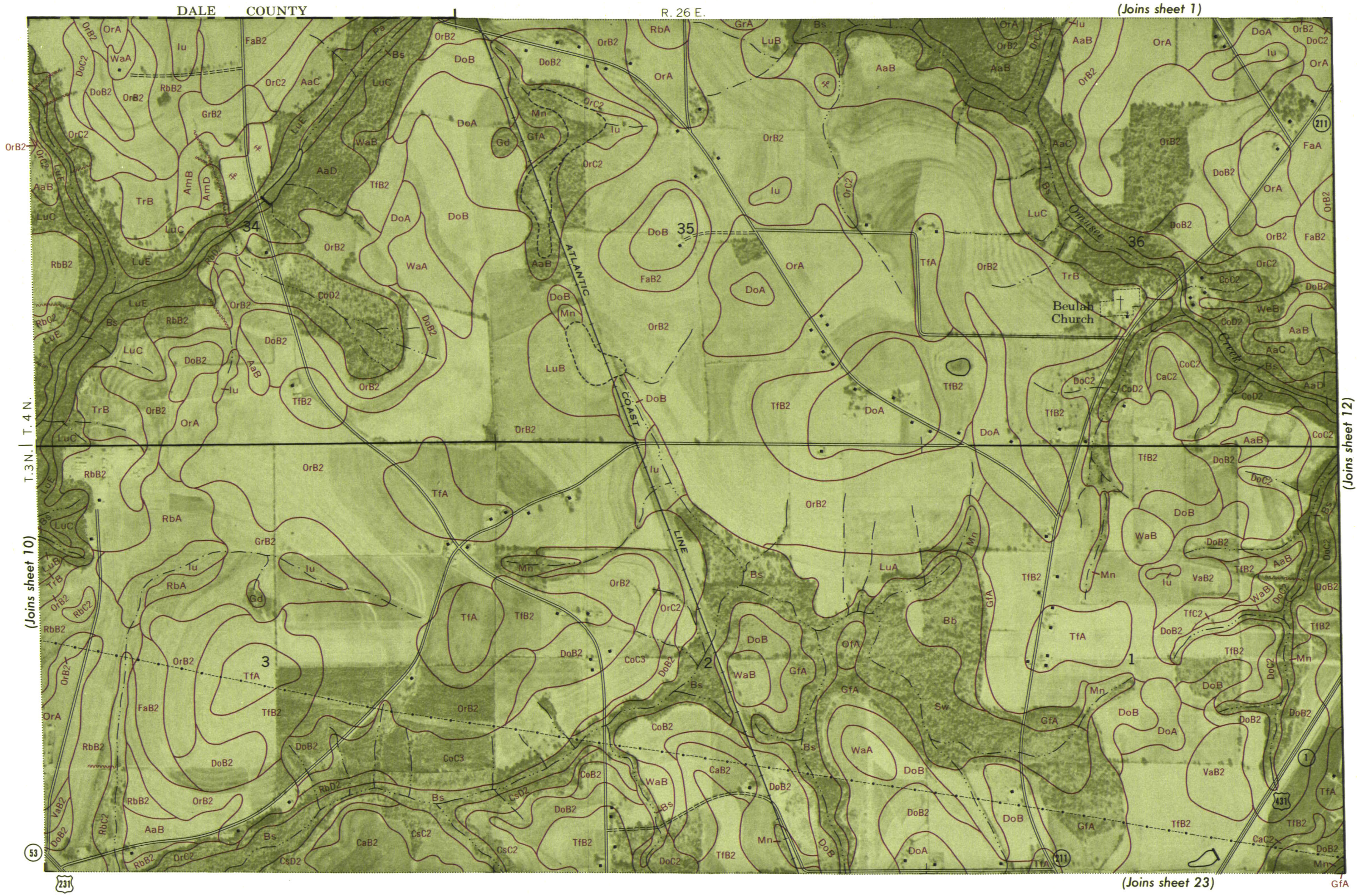
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

104

0 ½ Mile Scale 1:15840 0 3000 Feet

N

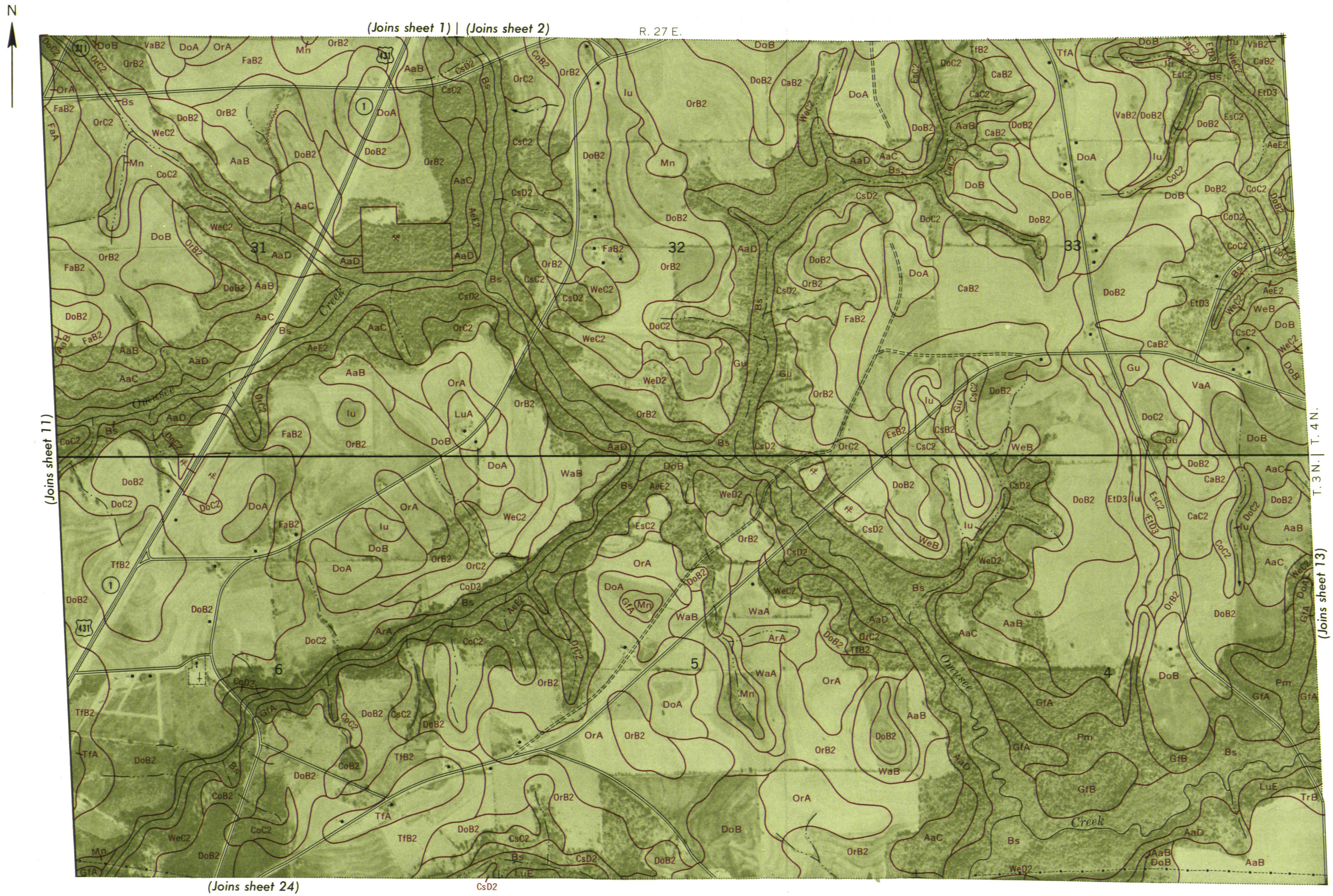


This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 12

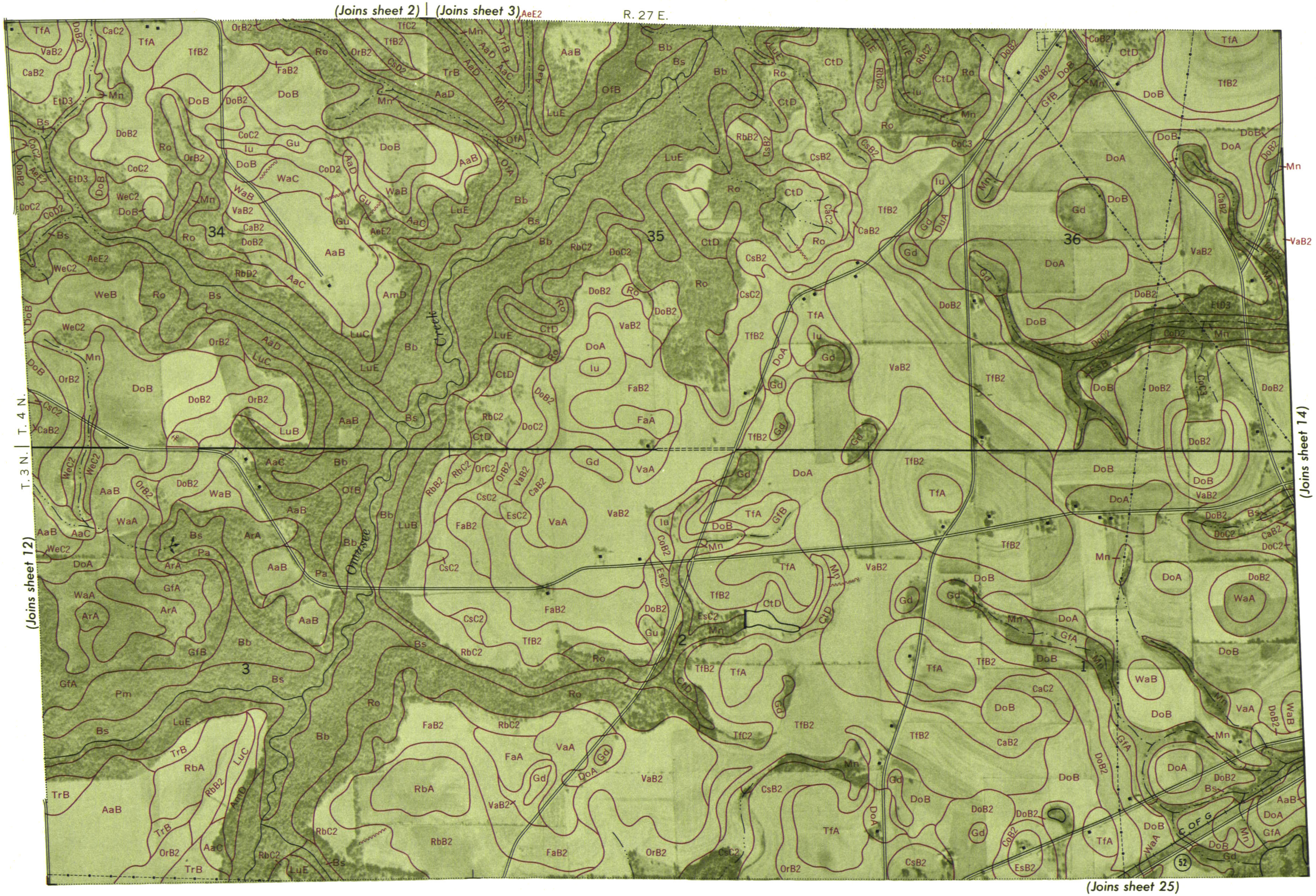


0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N



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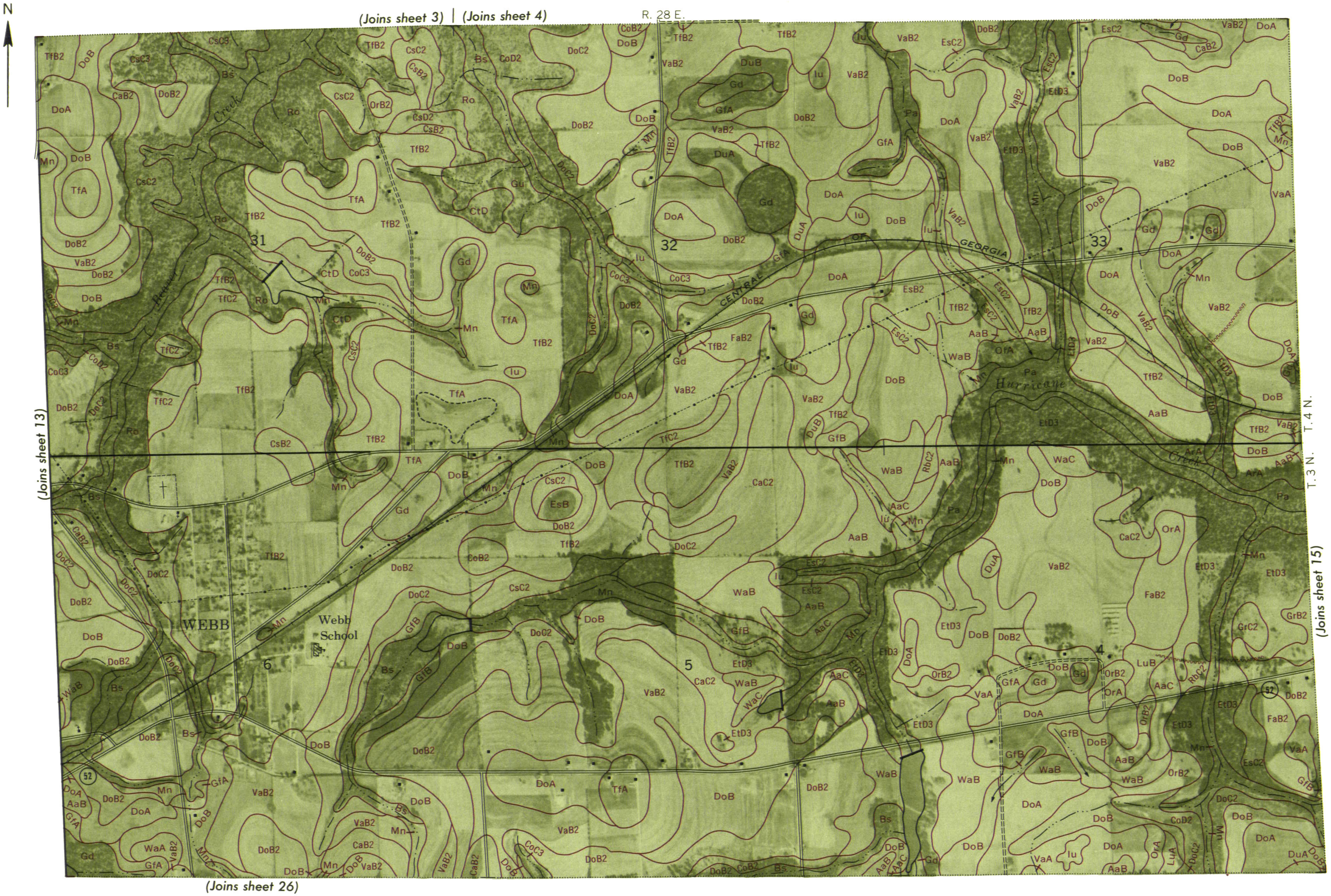
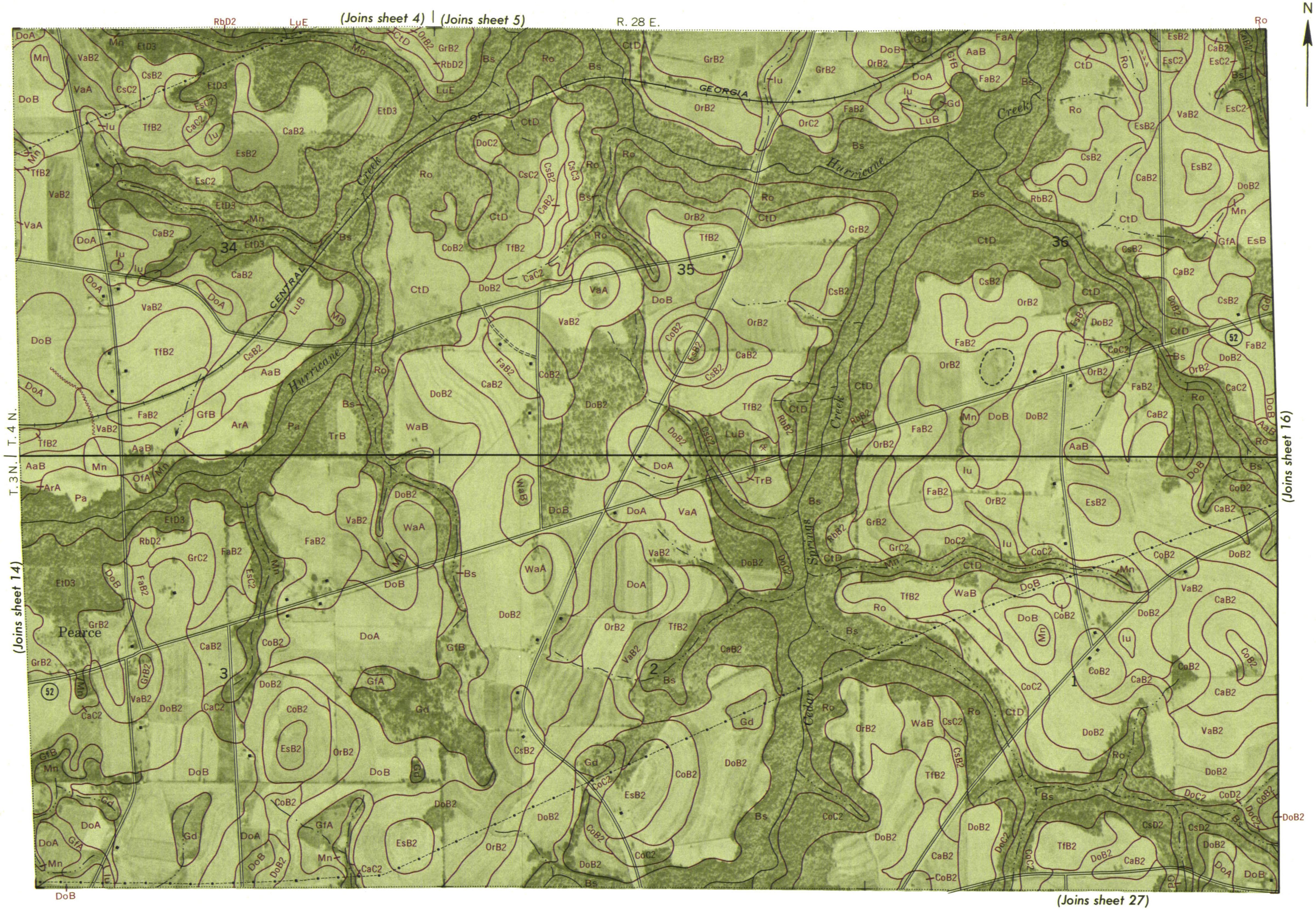


0 ½ Mile Scale 1:15840 0 3000 Feet

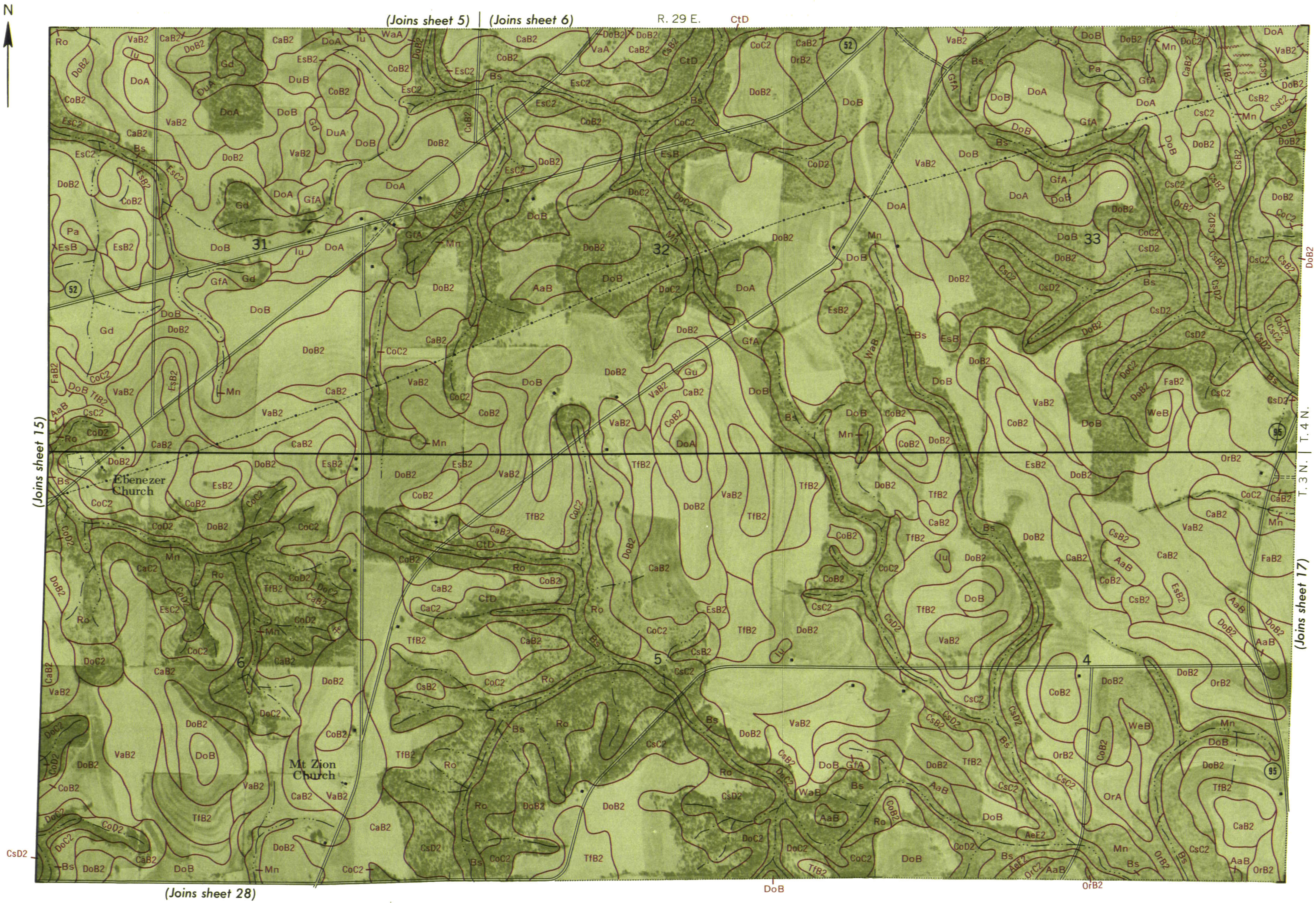


This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

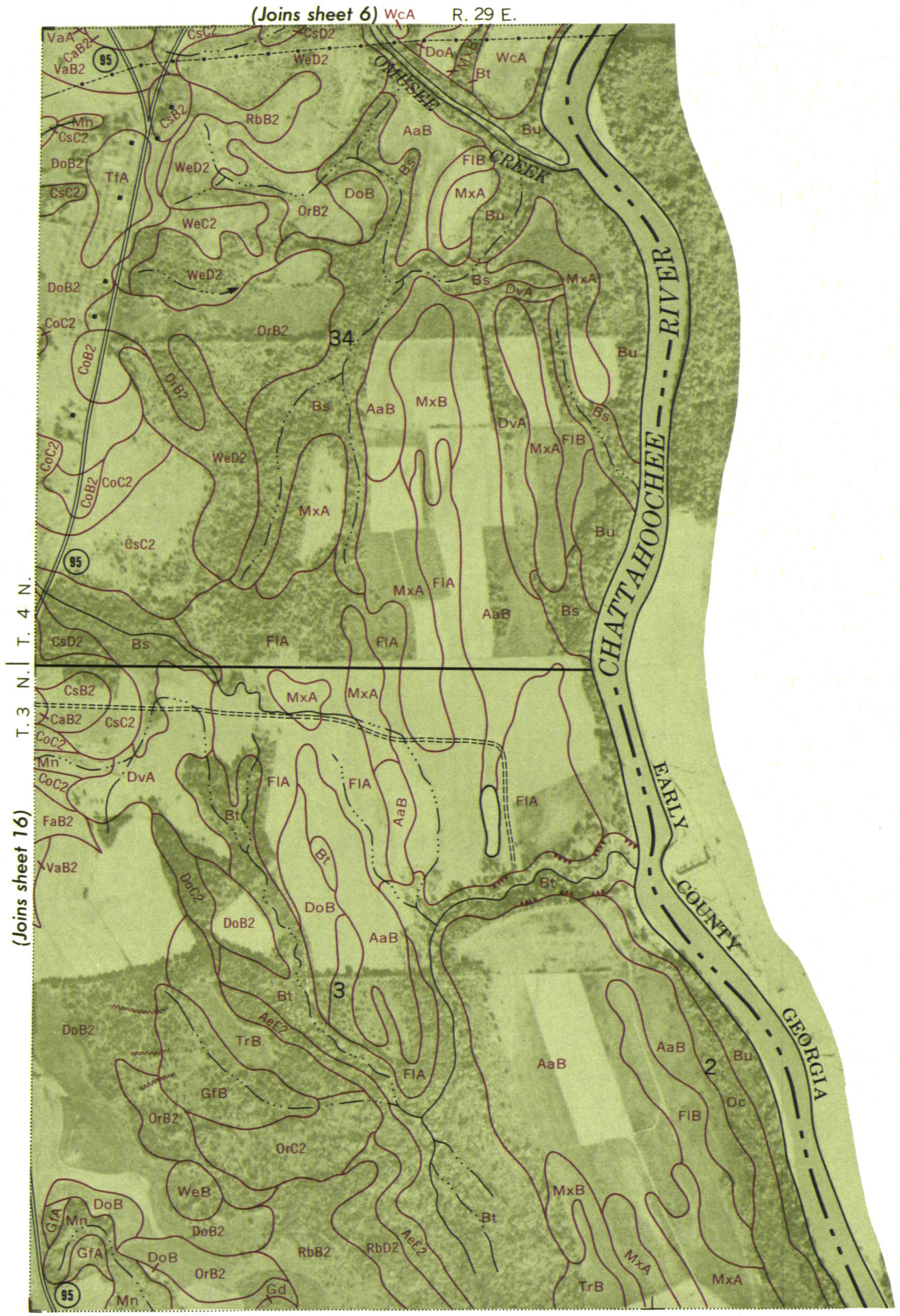
Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 16



0 ½ Mile Scale 1:15840 0 3000 Feet

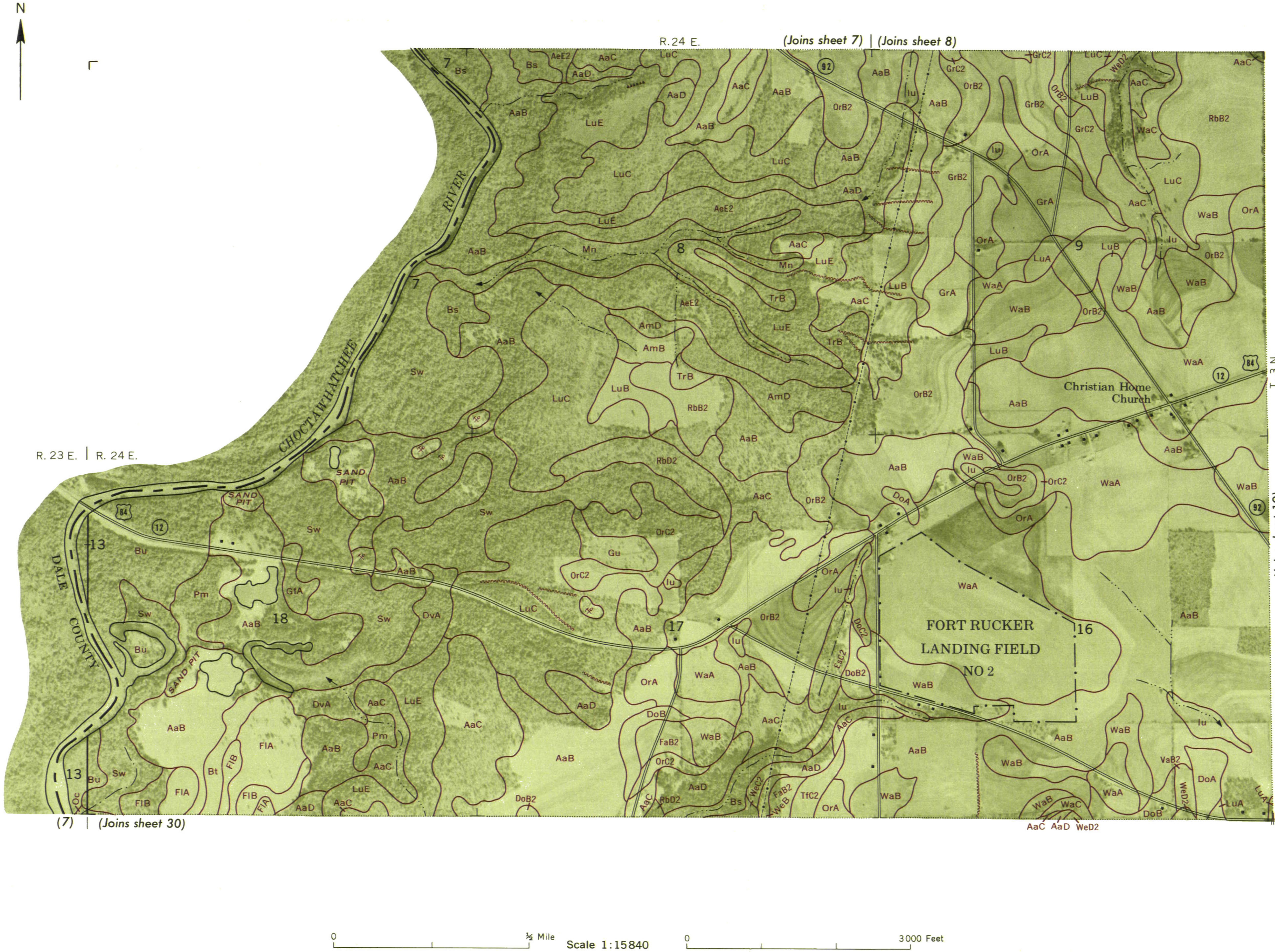


This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

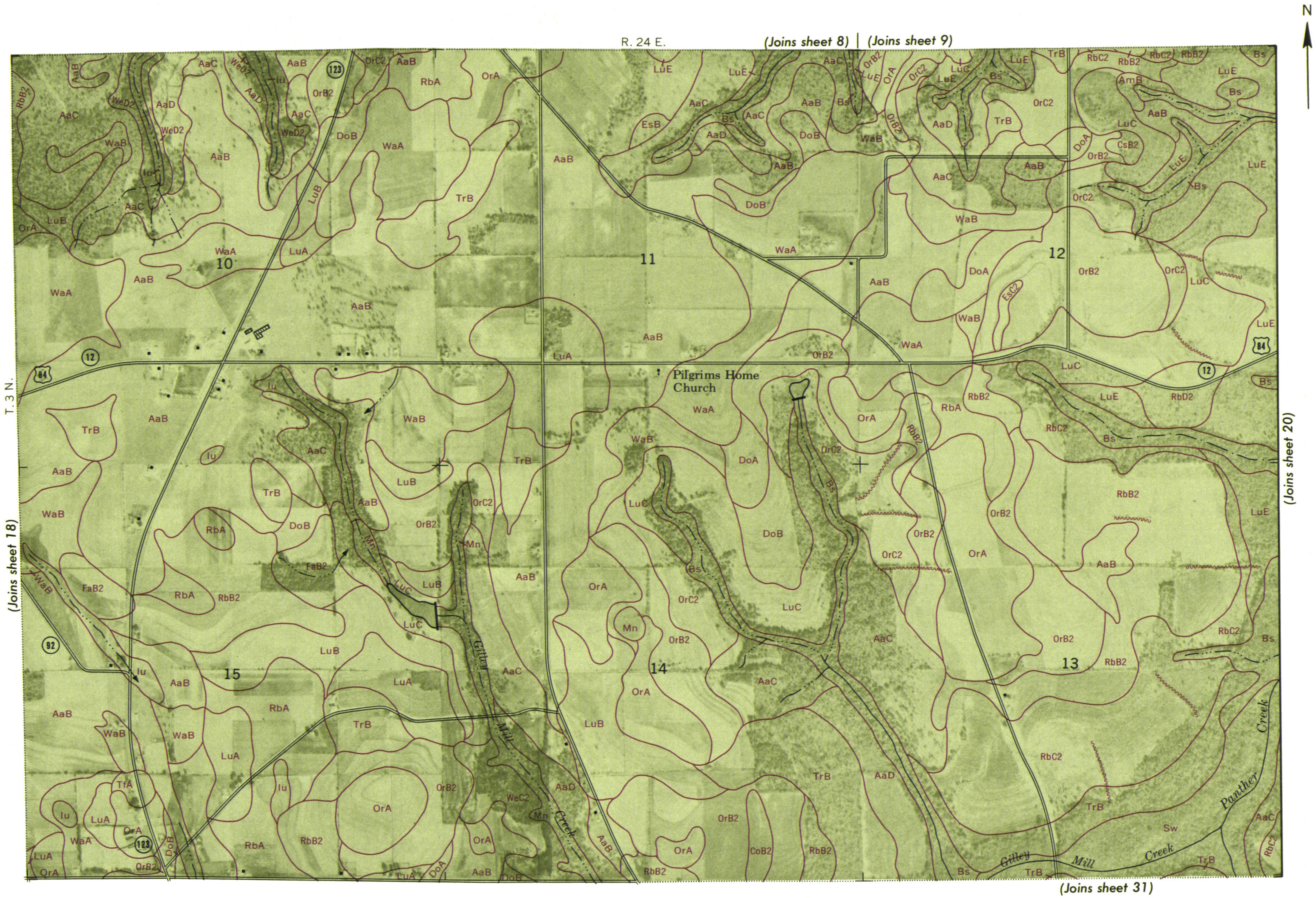
0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 18



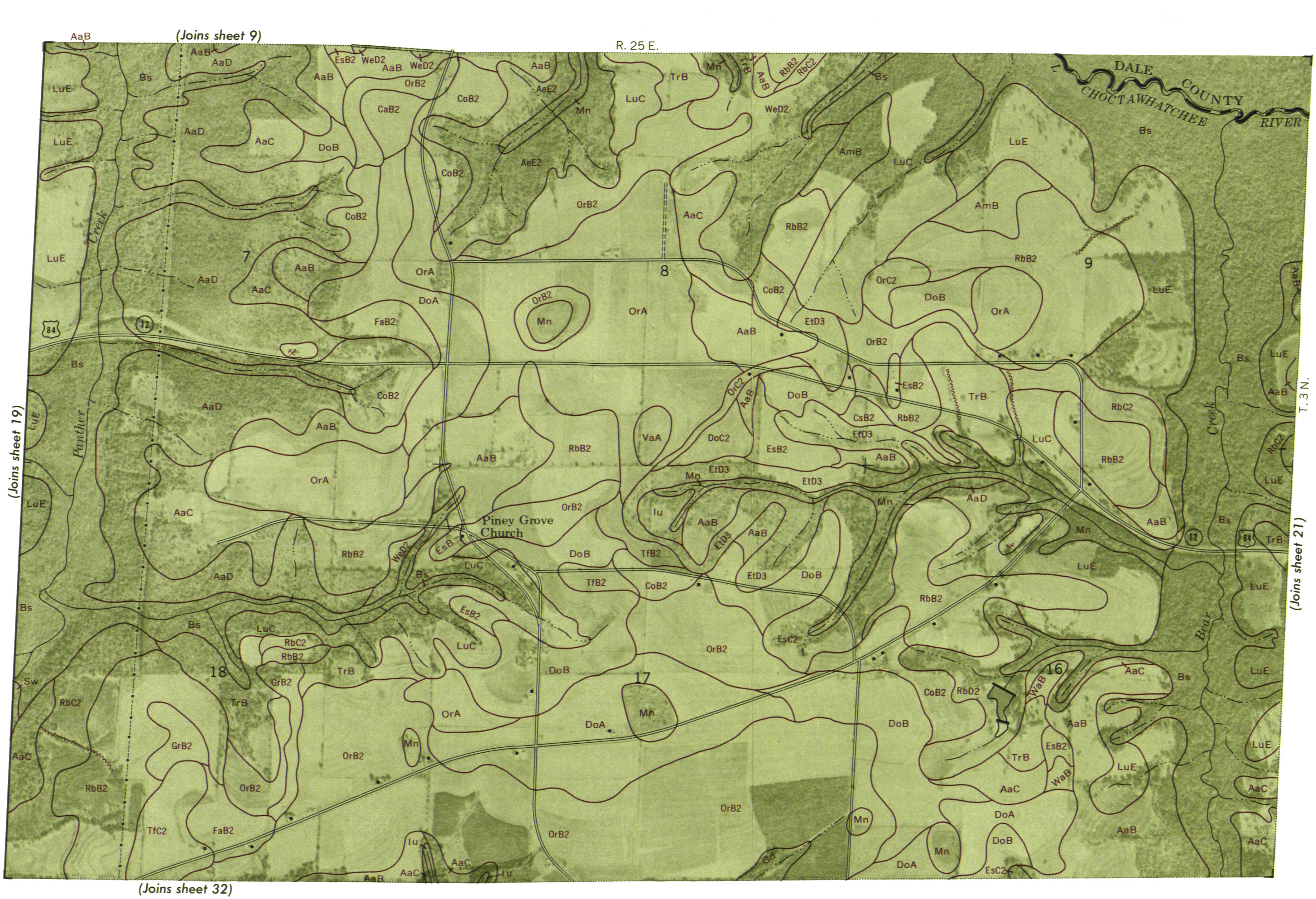
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet

20

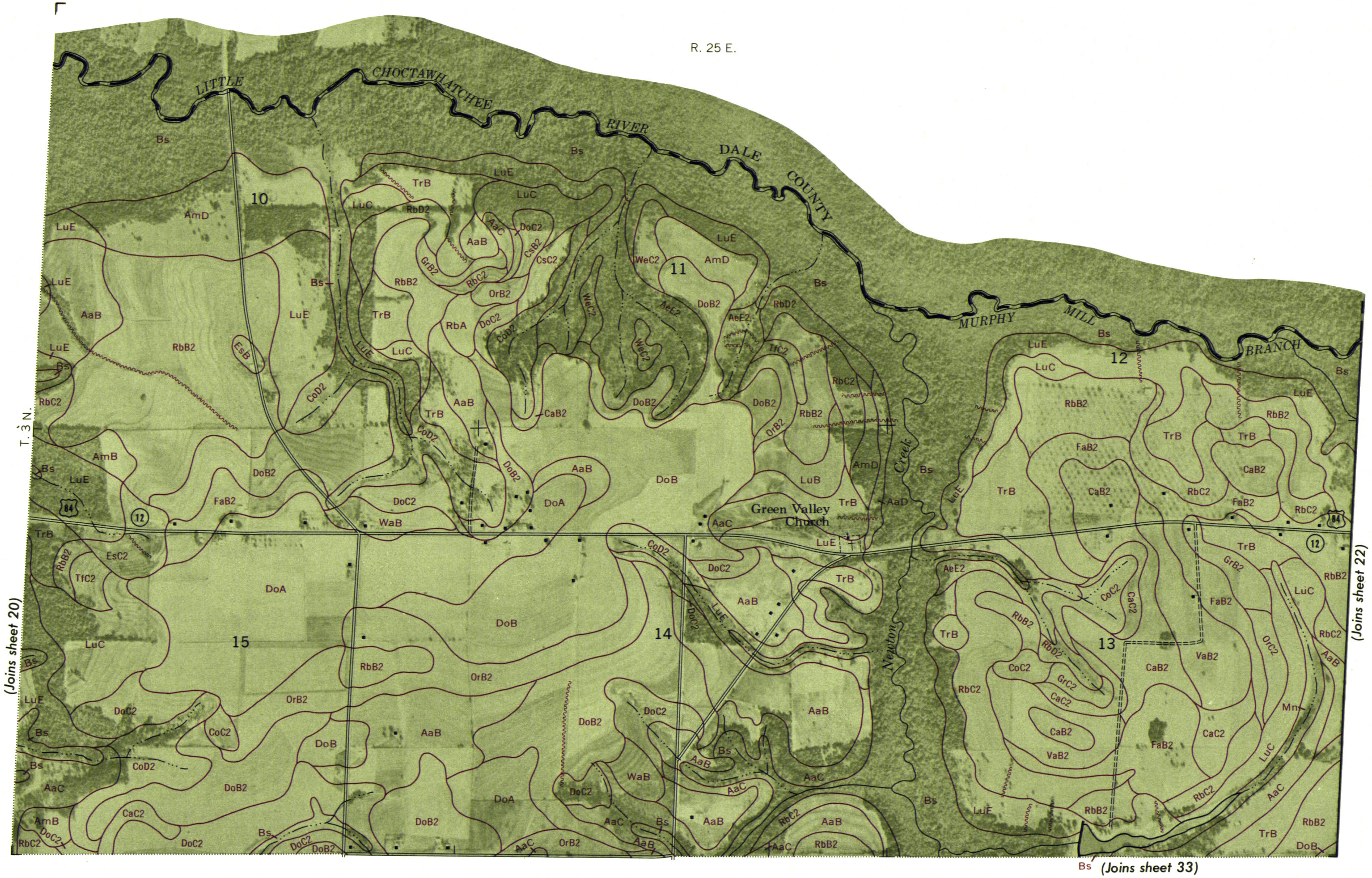


0 ½ Mile Scale 1:15840 0 3000 Feet

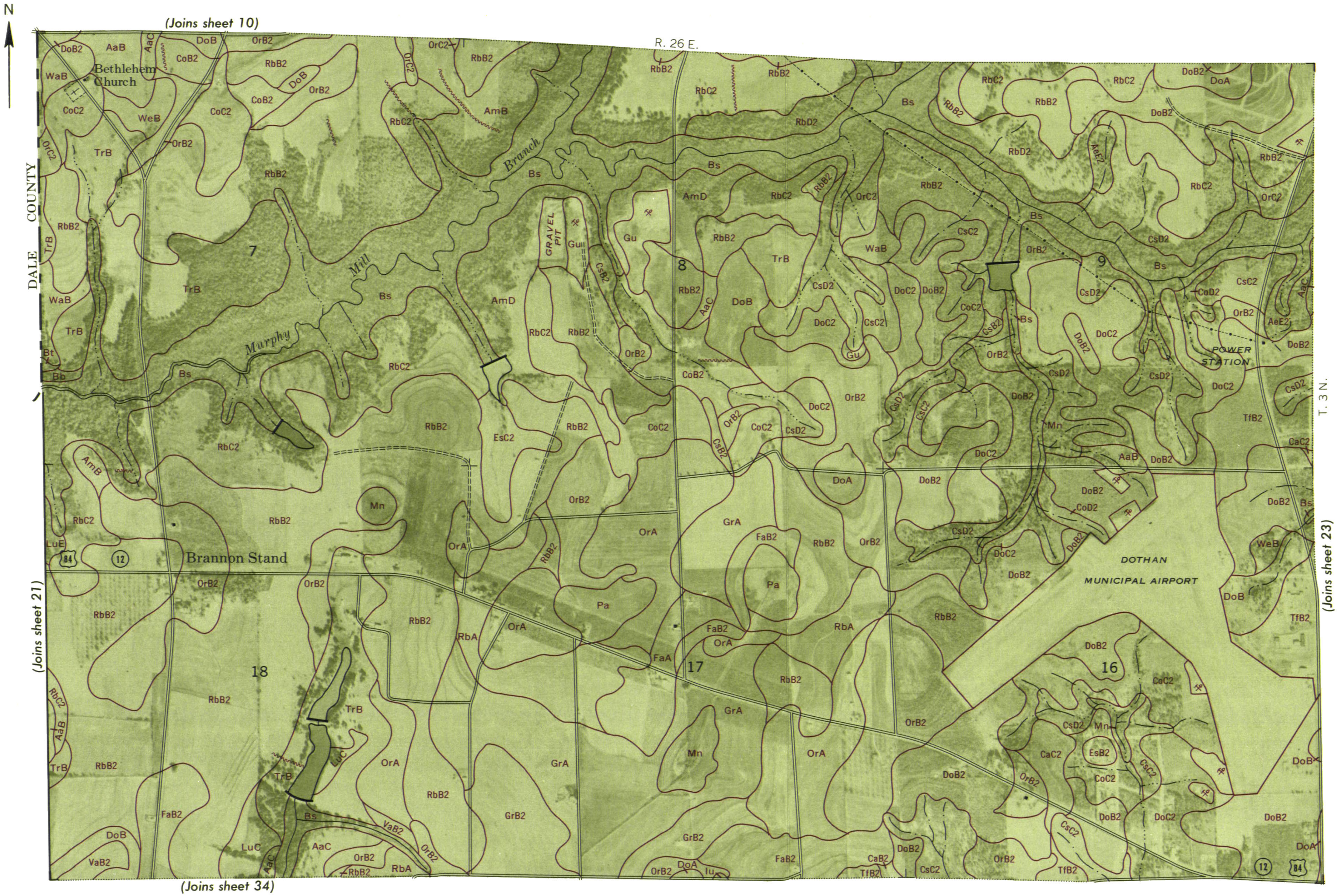
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N



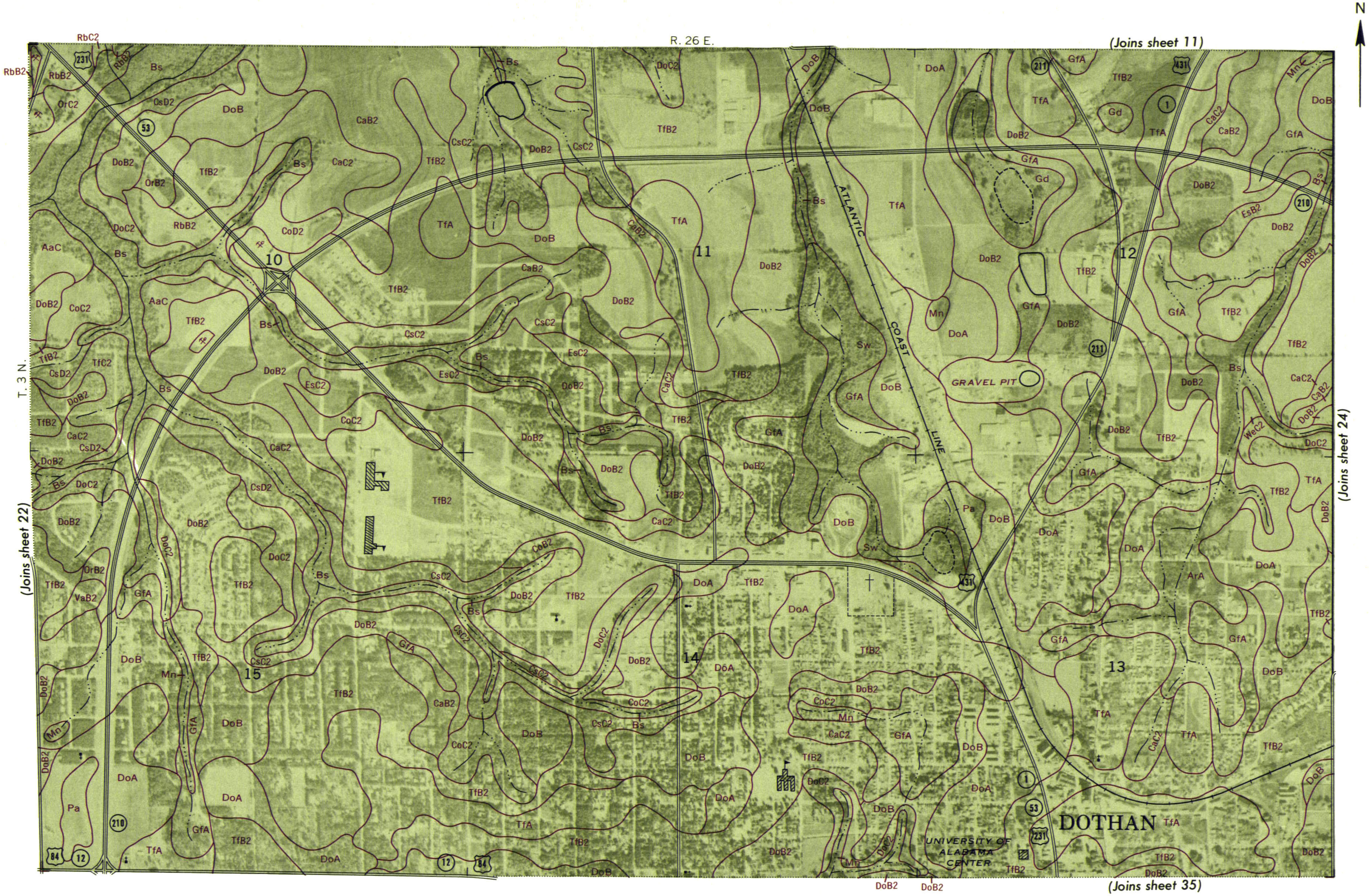
0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

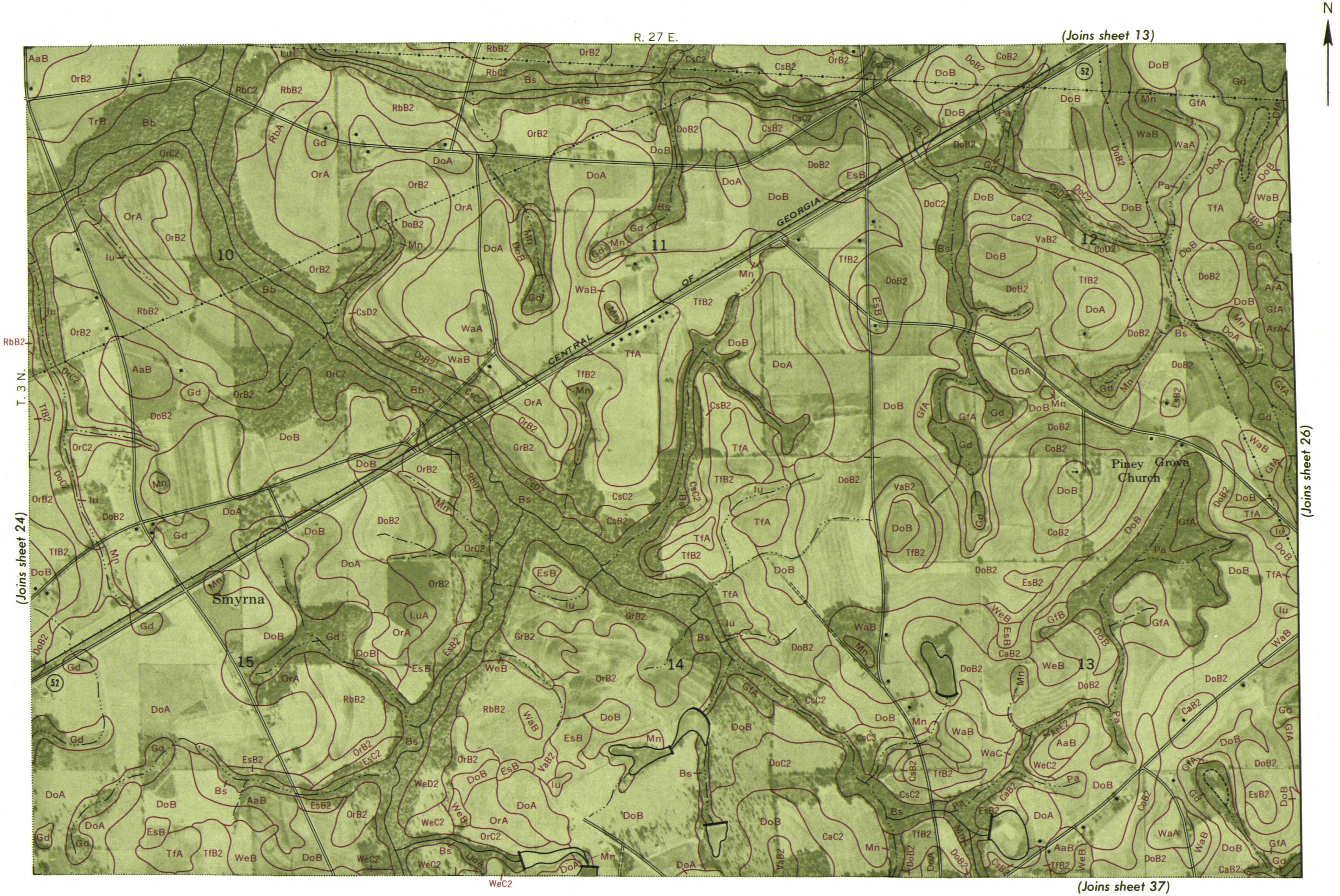
Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet

N

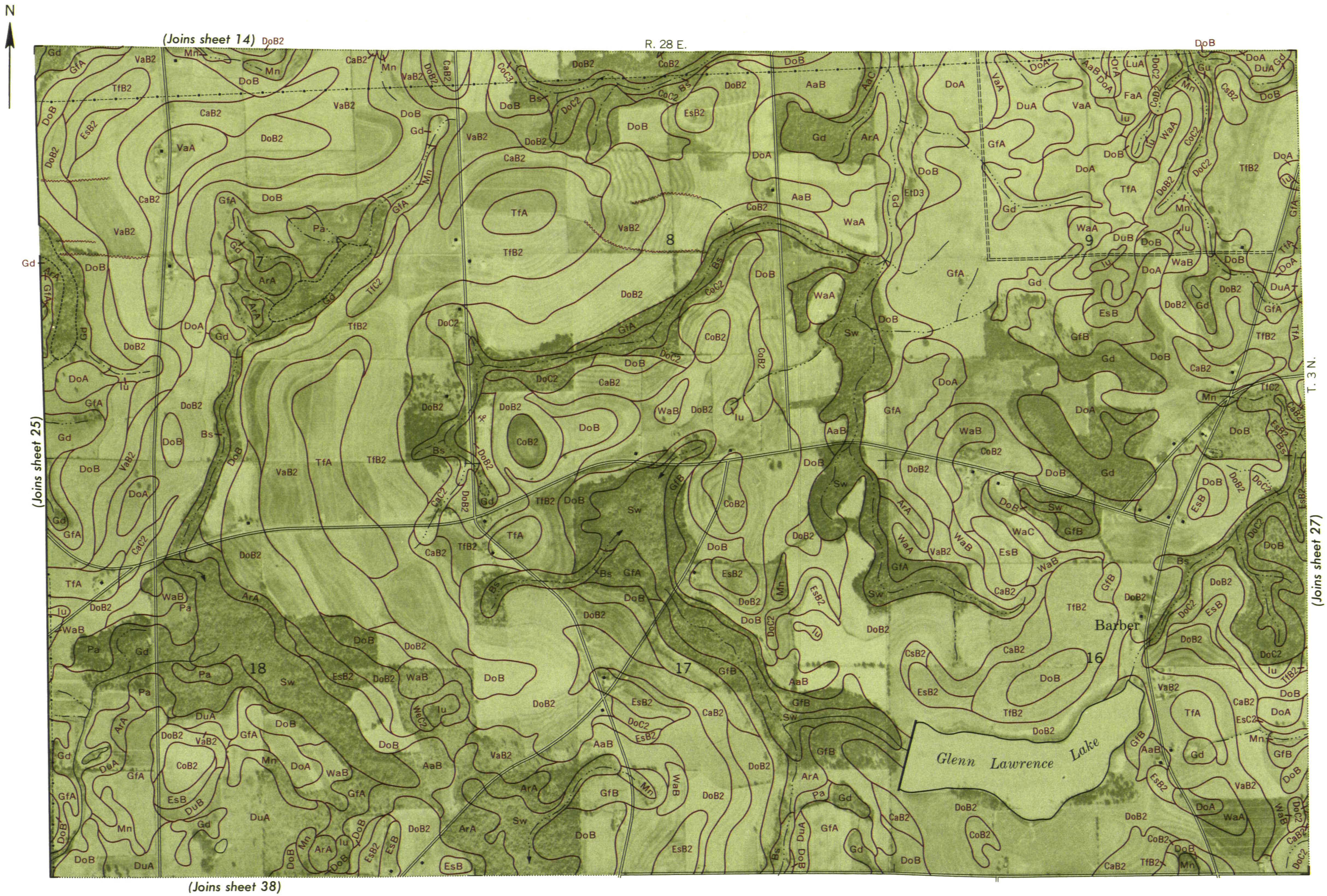
0 ½ Mile Scale 1:15840 0 3000 Feet



This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

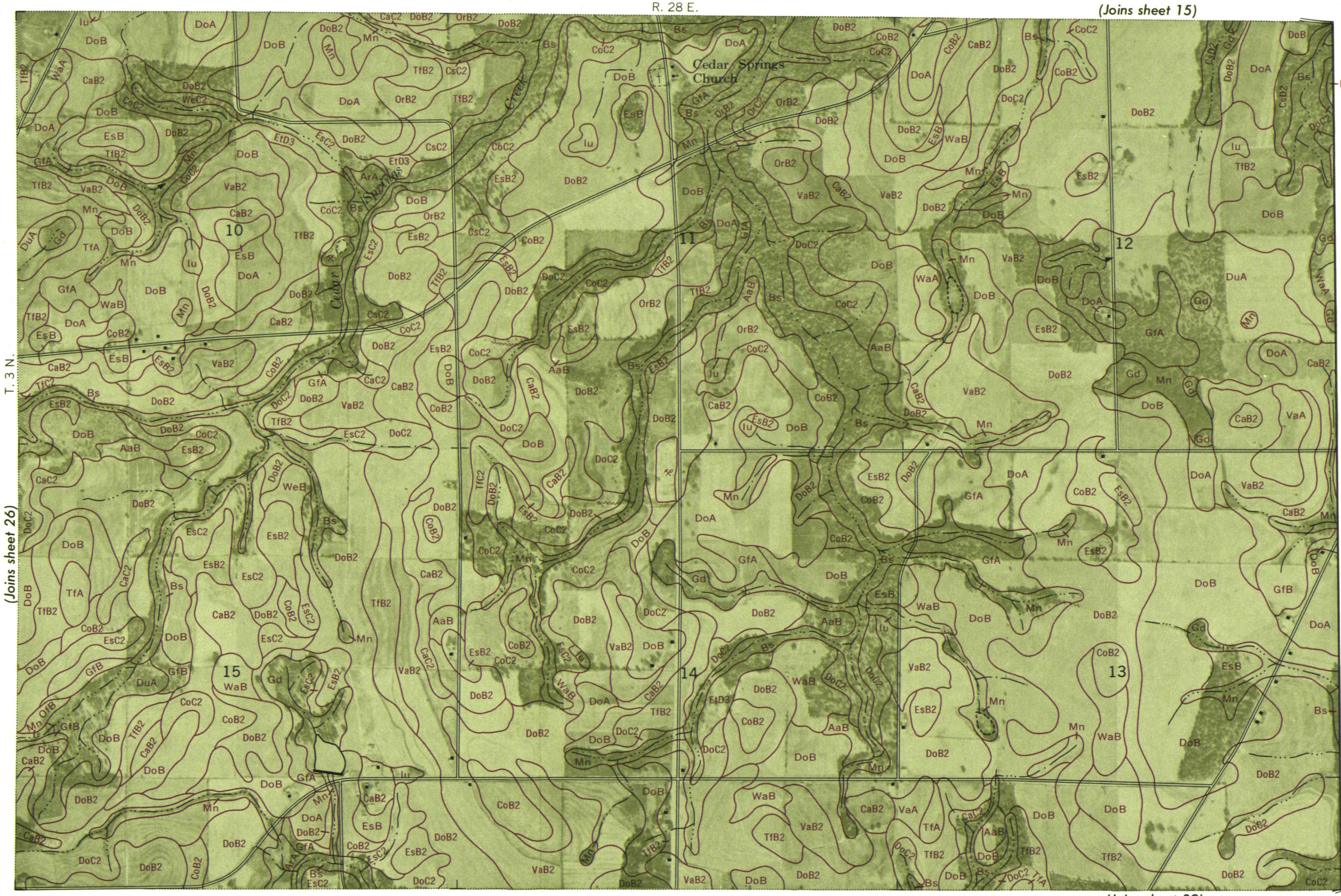


0 ½ Mile Scale 1:15840 0 3000 Feet

N

R. 28 E.

(Joins sheet 15)



(Joins sheet 26)

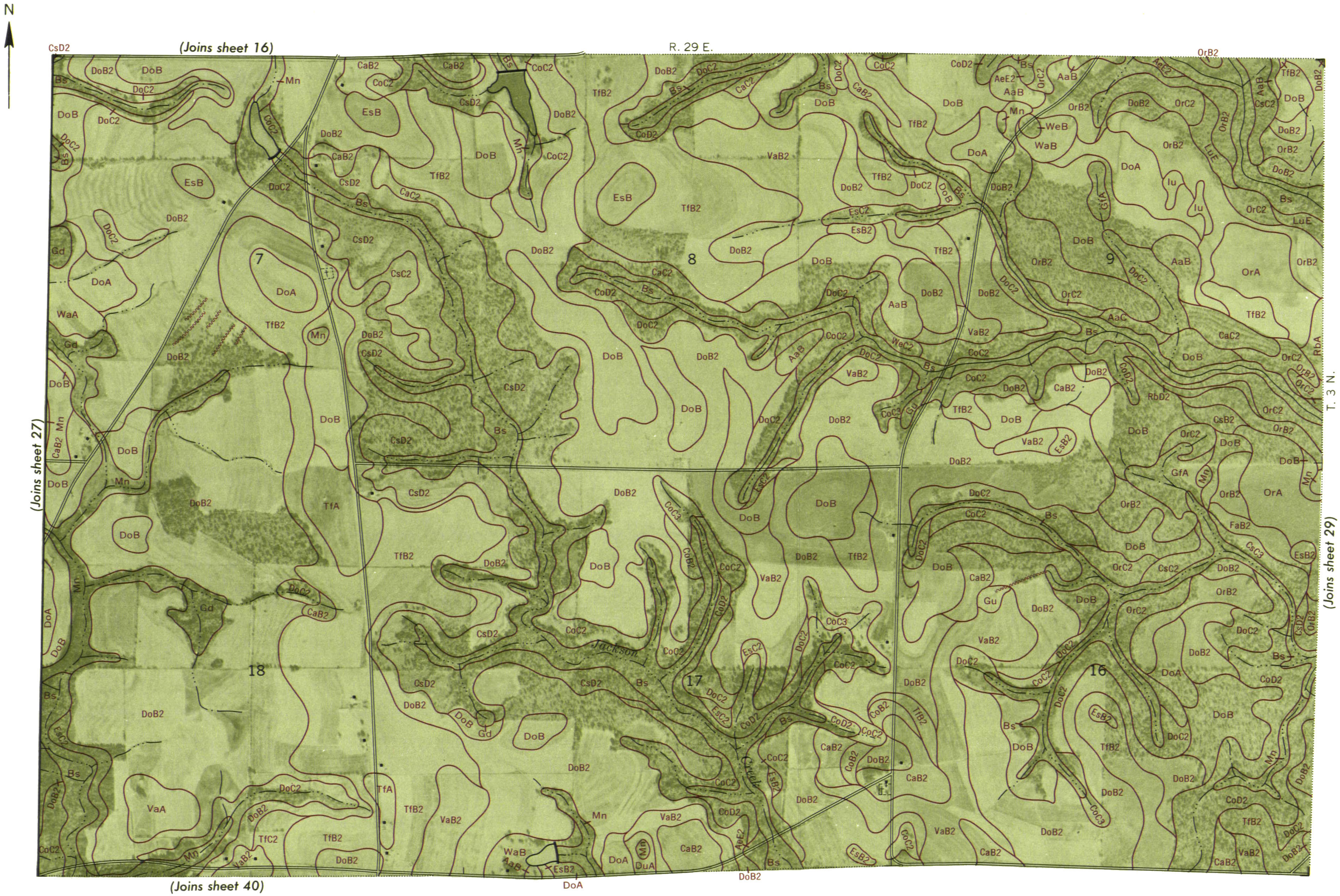
(Joins sheet 28)

(Joins sheet 39)

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

N

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

(Joins sheet 17)

0 ½ Mile Scale 1:15840 0 3000 Feet

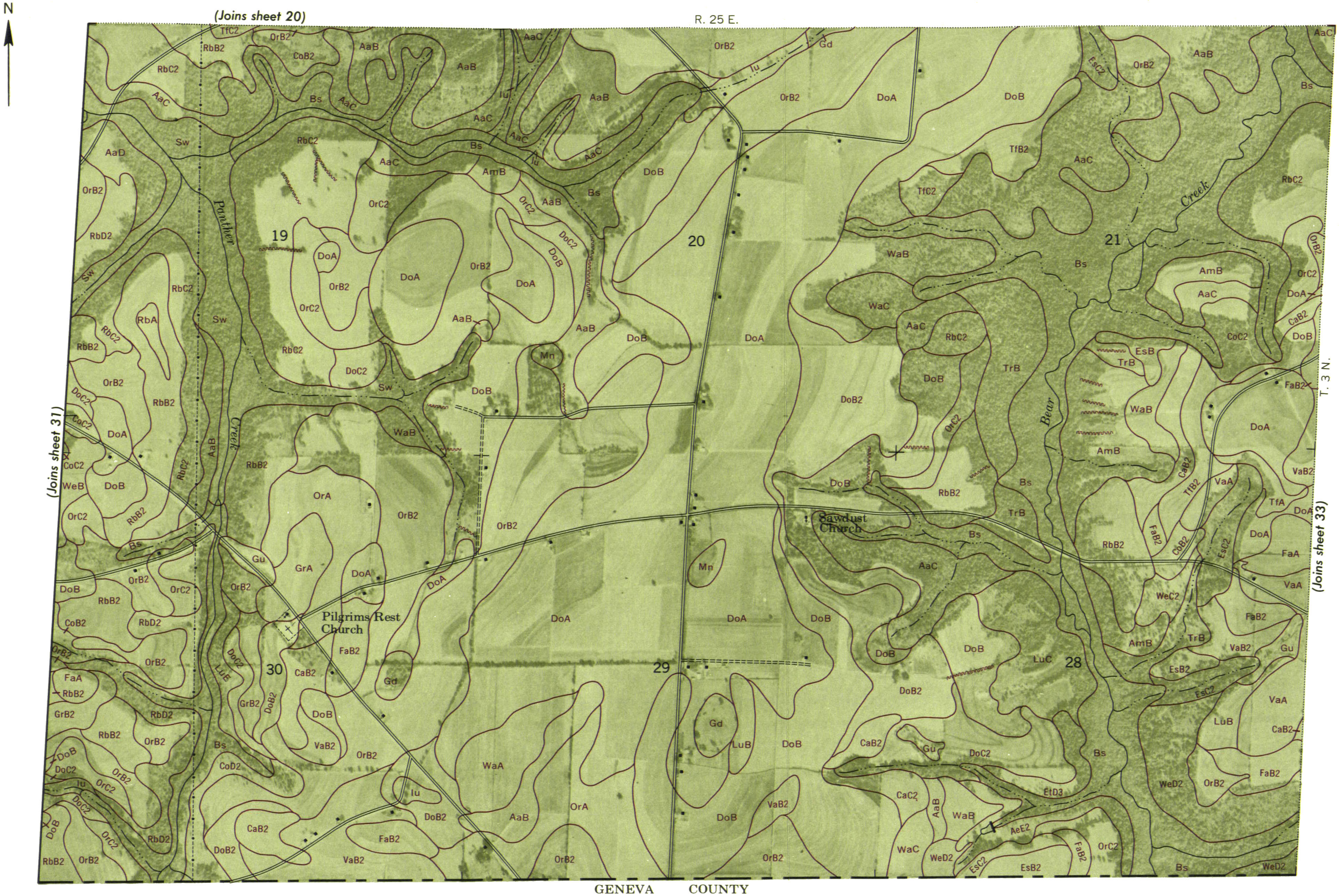
HOUSTON COUNTY, ALABAMA — SHEET NUMBER 30

0 ½ Mile Scale 1:15840 0 3000 Feet

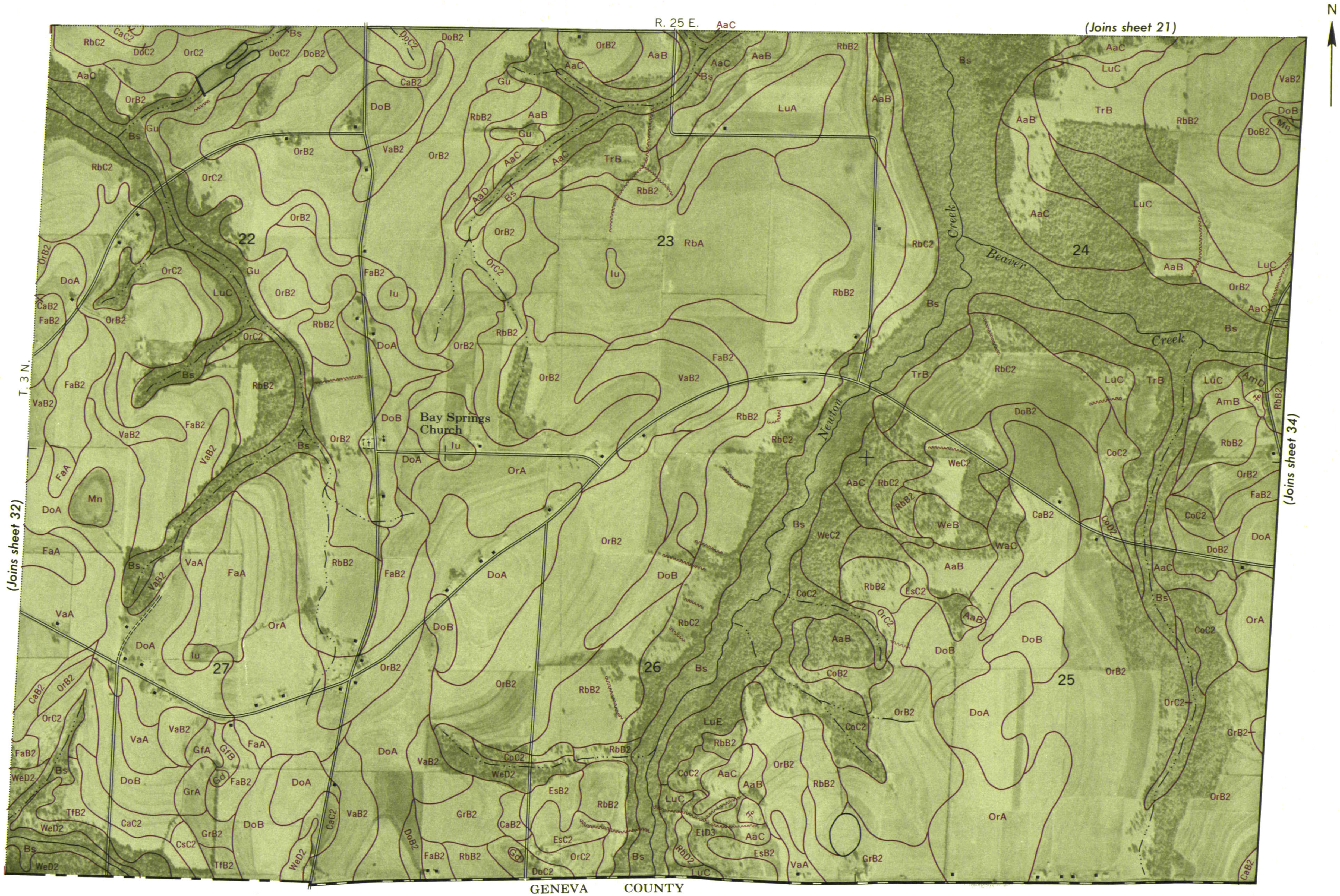
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet



This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

(34)

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 34

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 36

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

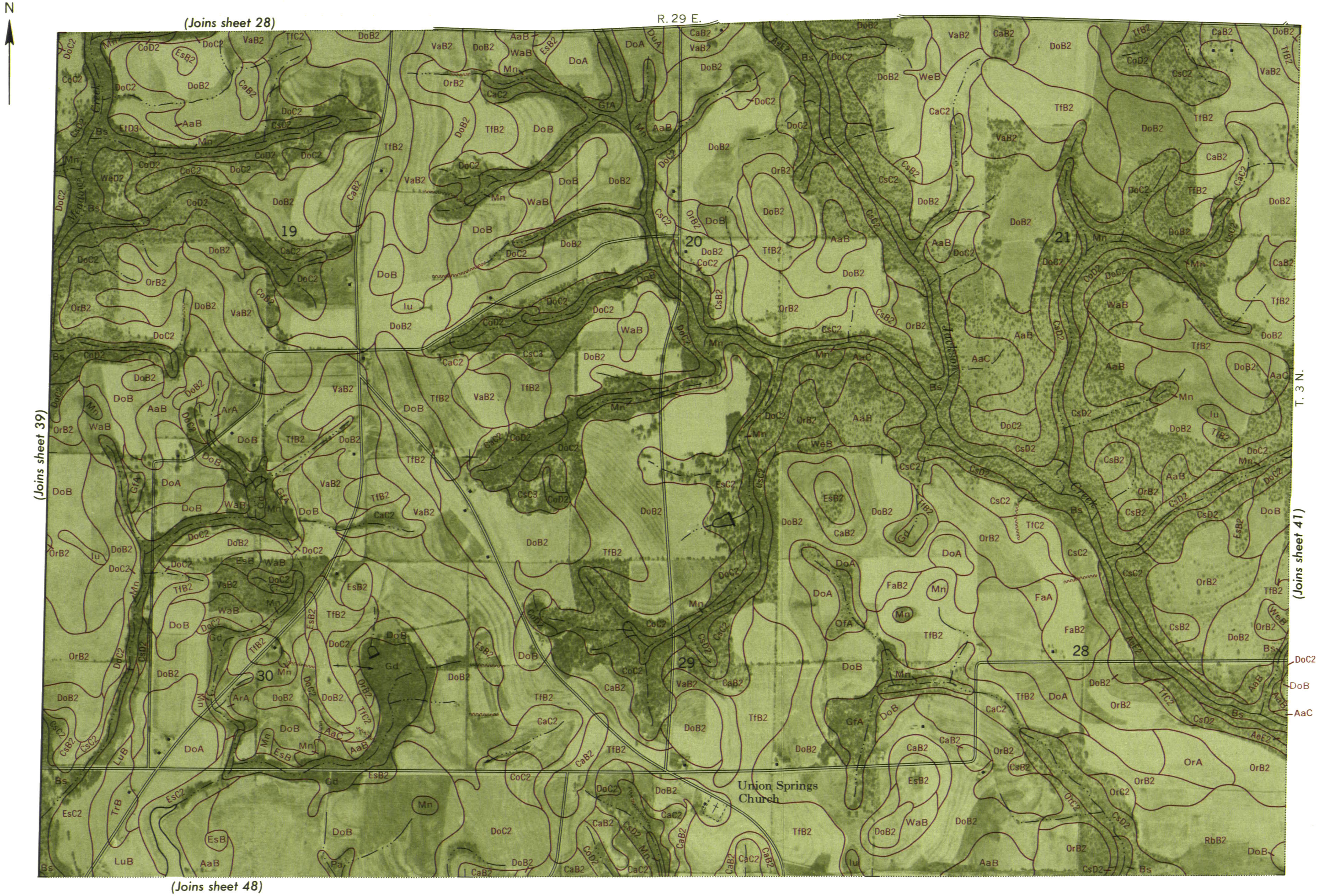
0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 40



0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

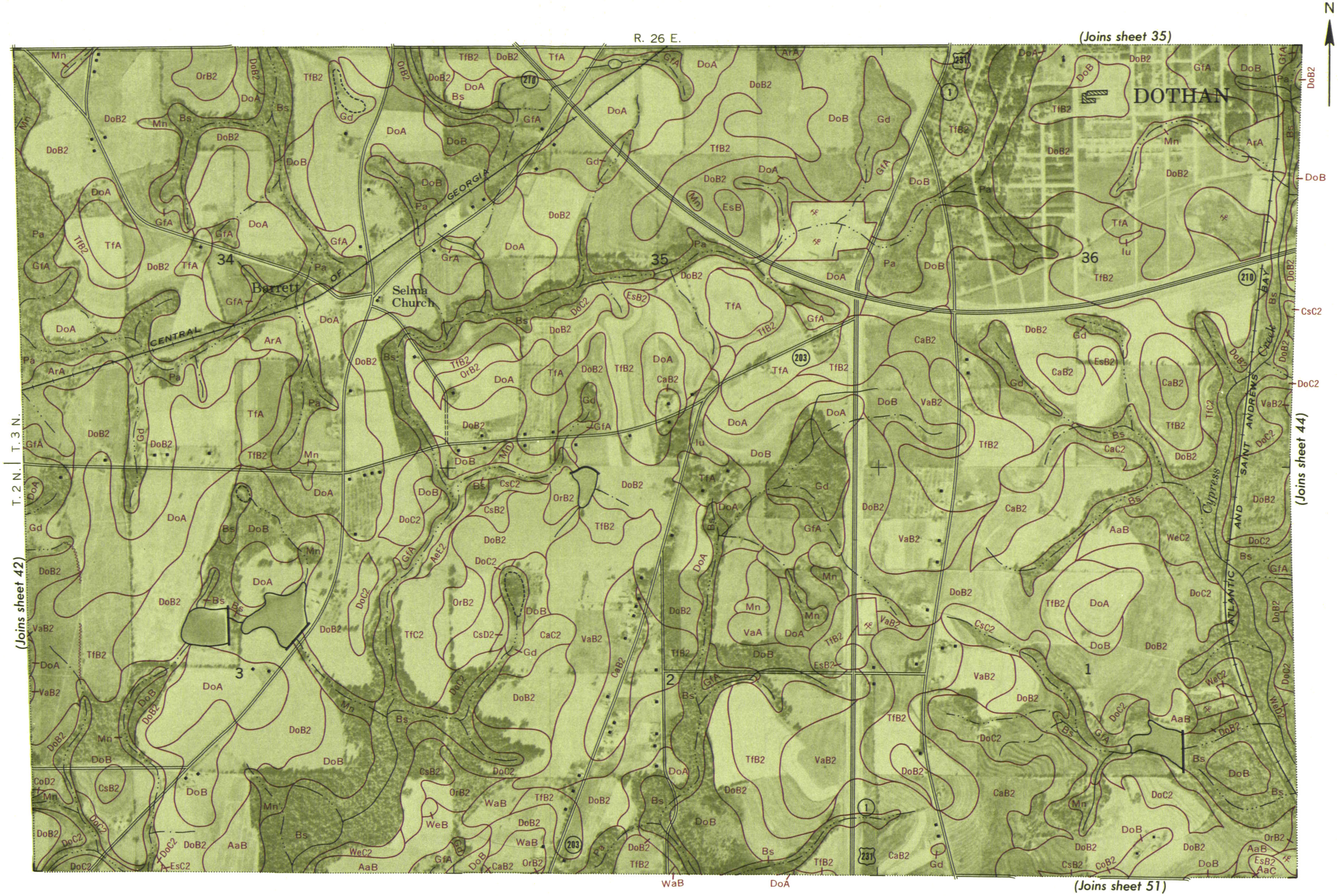
0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 42

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet

0 ½ Mile Scale 1:15840 0 3000 Feet

N

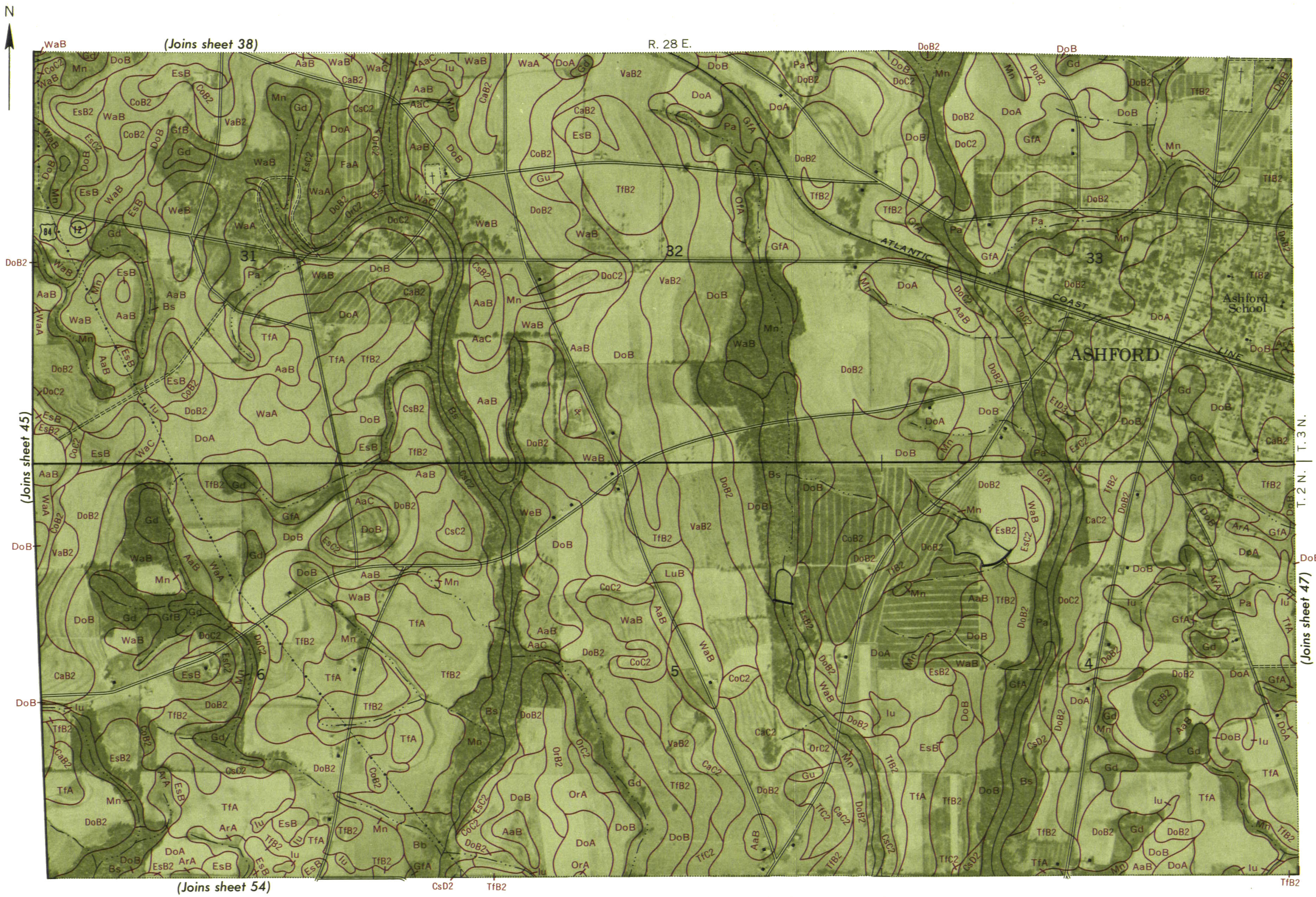
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 46

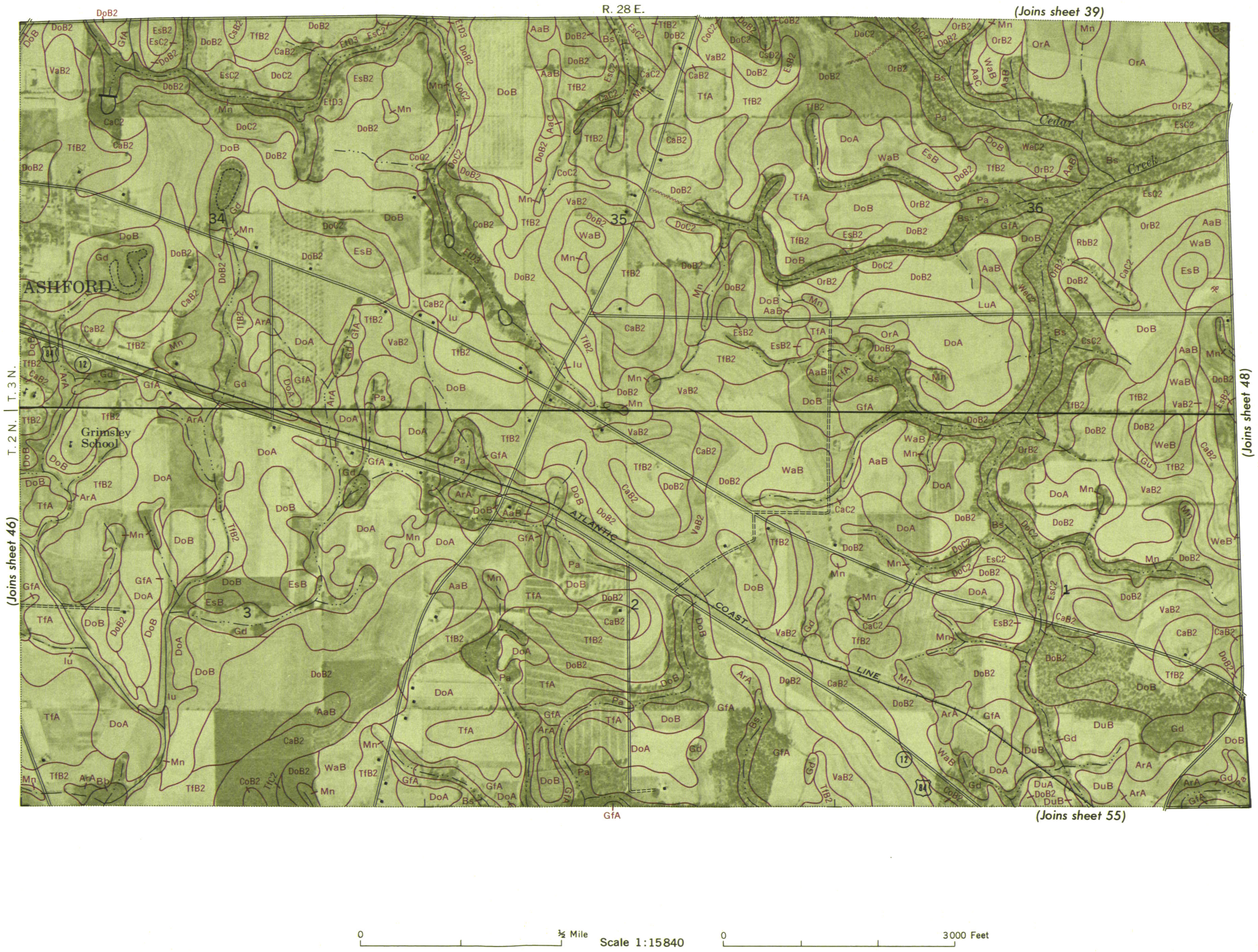
46



0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



HOUSTON COUNTY, ALABAMA — SHEET NUMBER 48

0 ½ Mile Scale 1:15840 0 3000 Feet

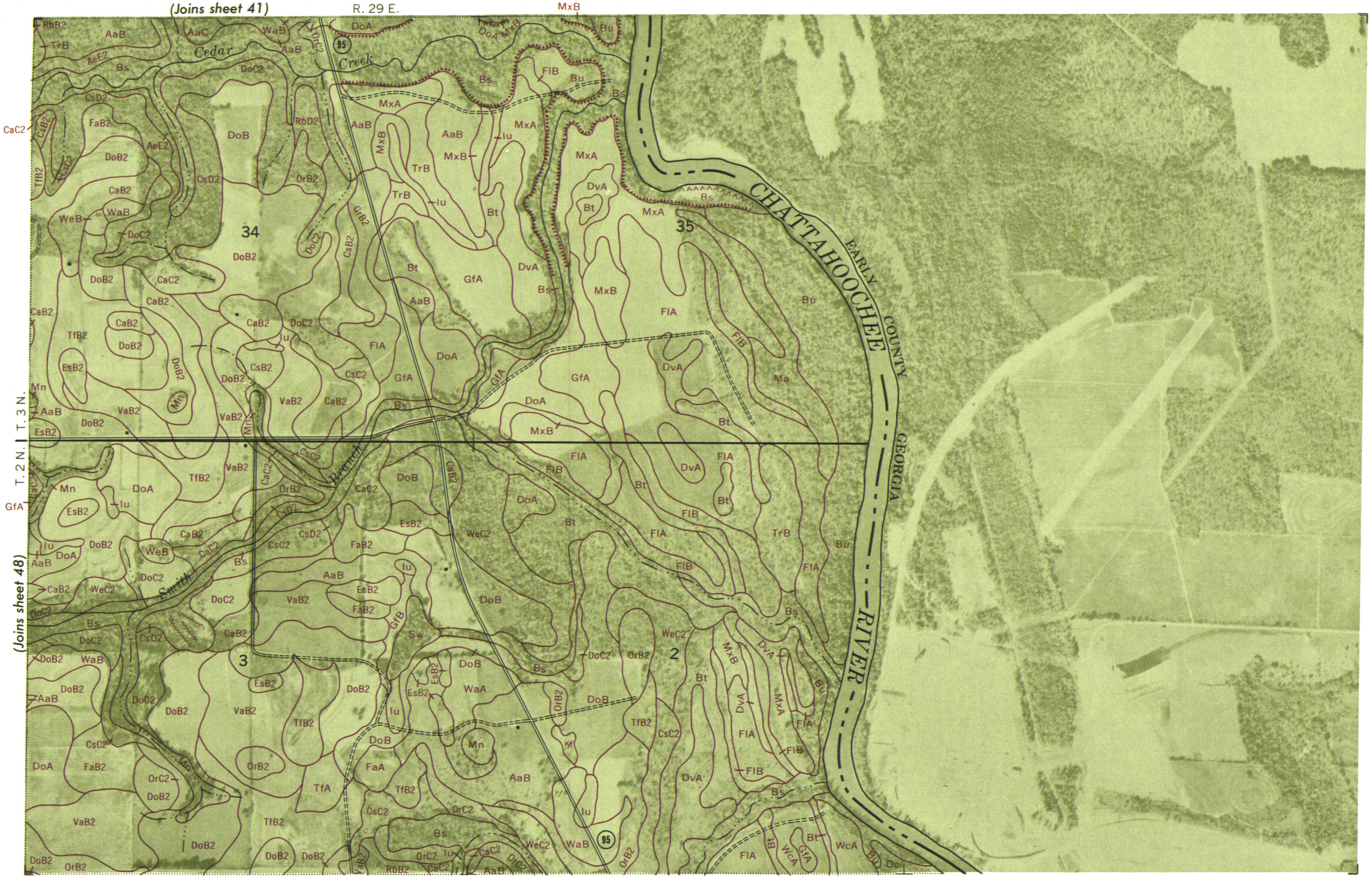
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N

(Joins sheet 41)

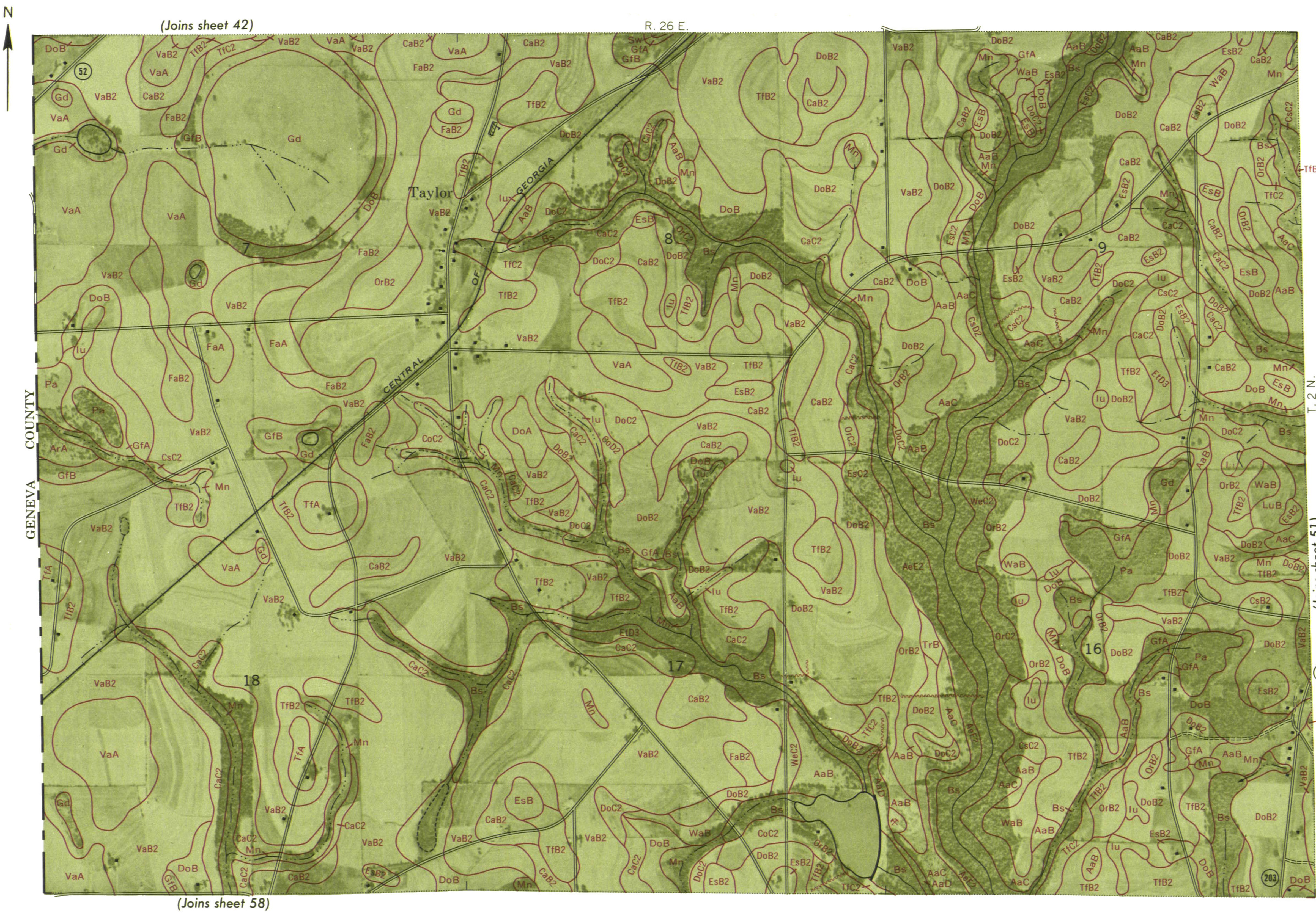
R. 29 E.



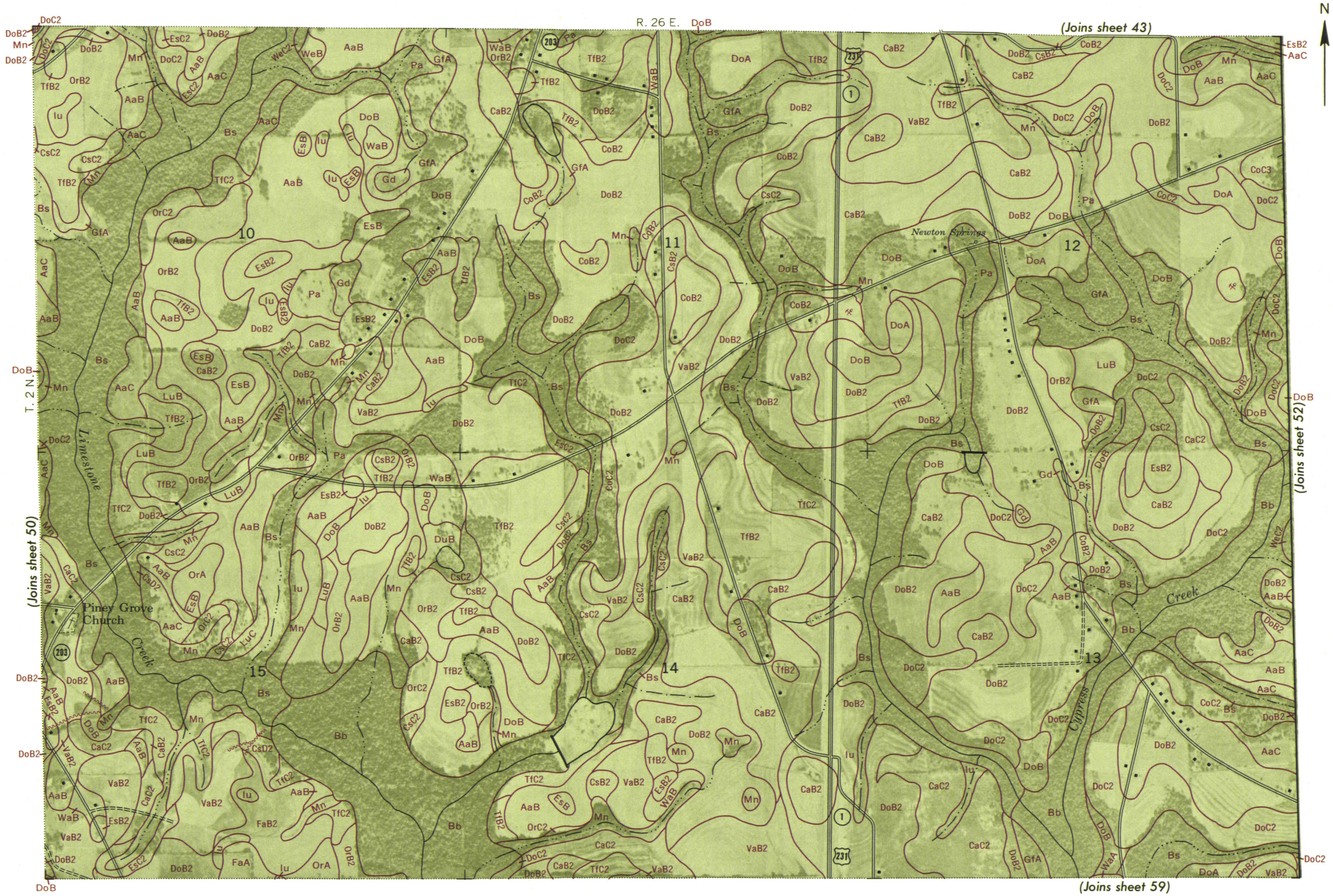
(Joins sheet 48)

(Joins sheet 57)

0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

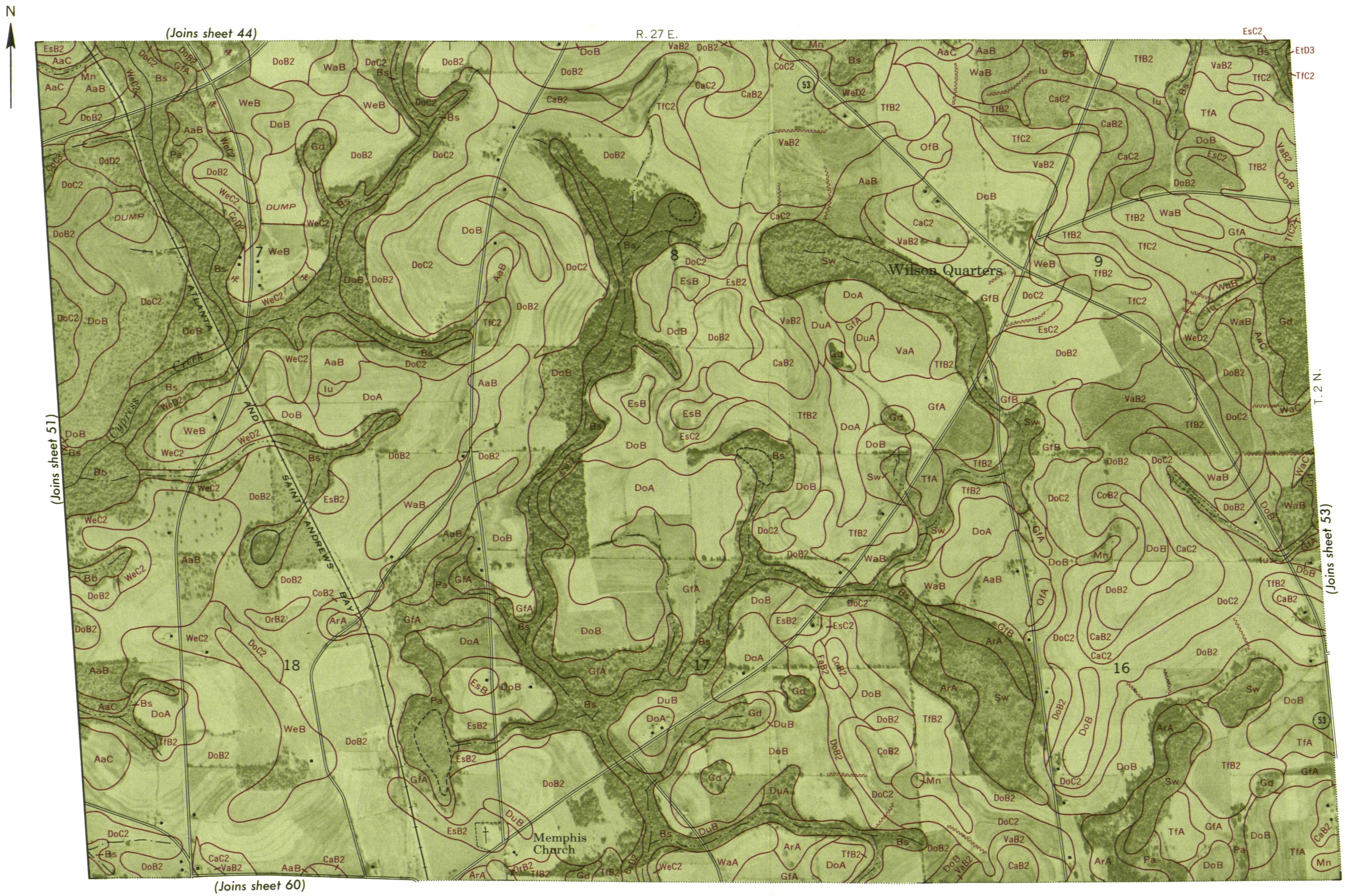


This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

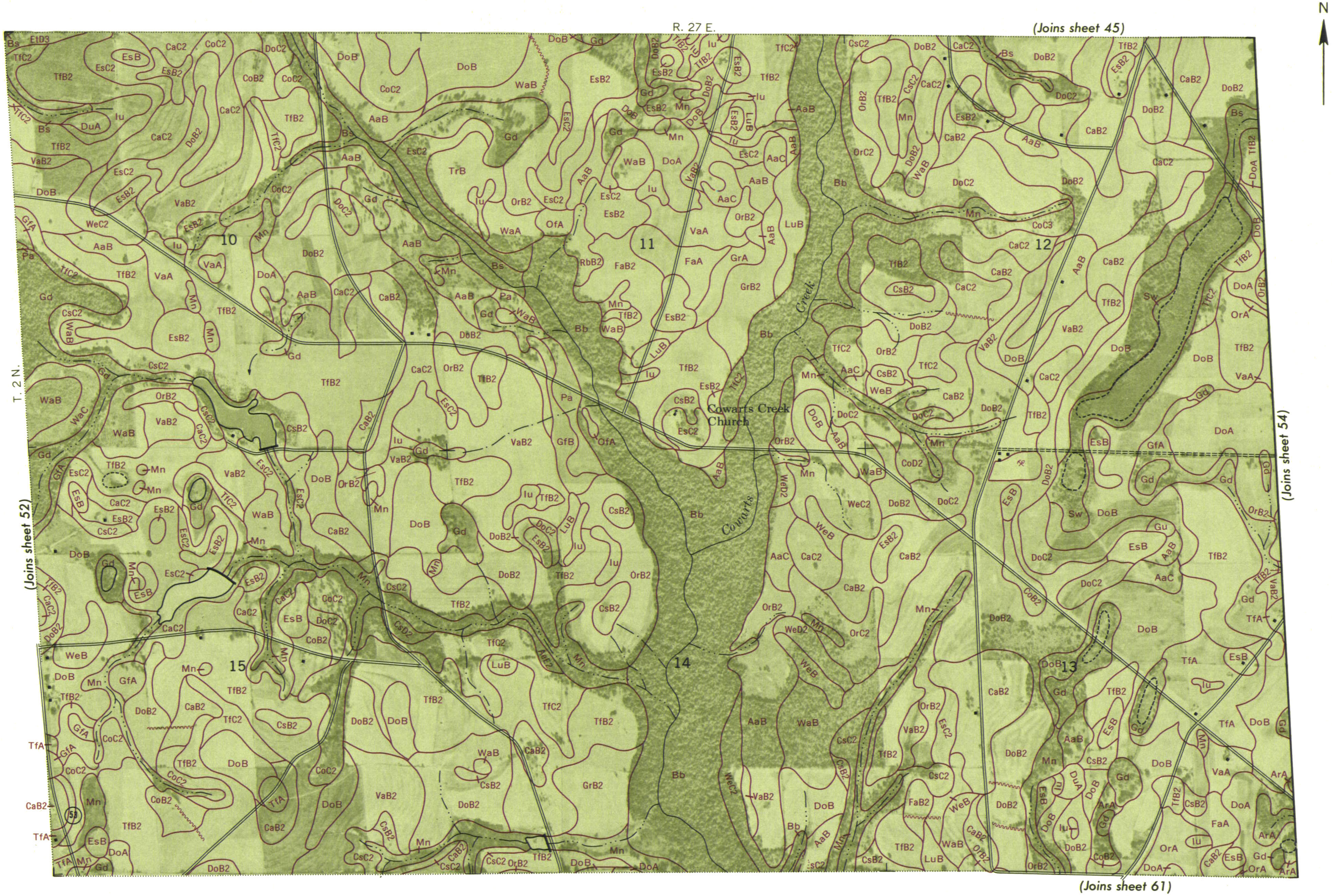
HOUSTON COUNTY, ALABAMA — SHEET NUMBER 52



0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 54

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 56

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

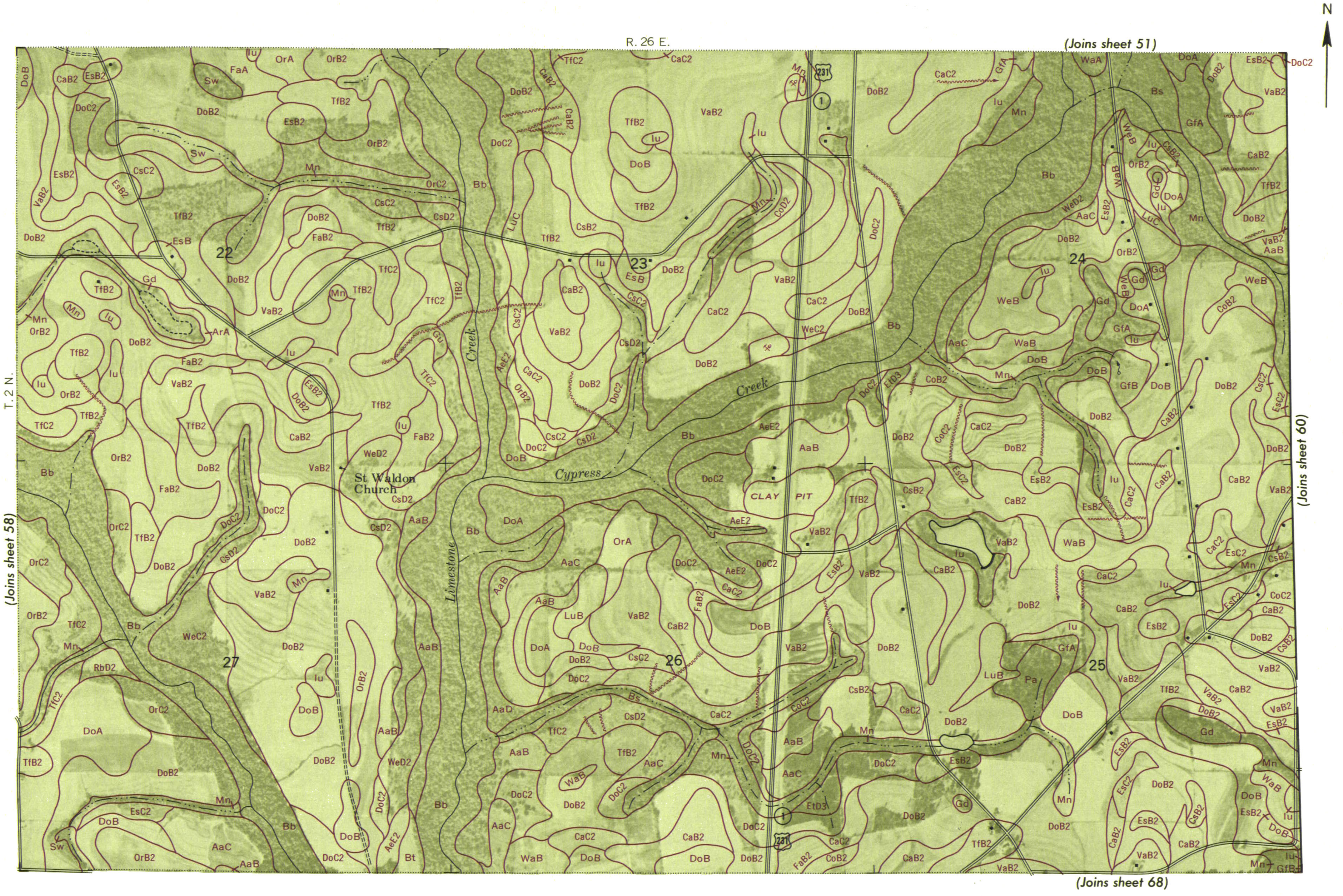
0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 58

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

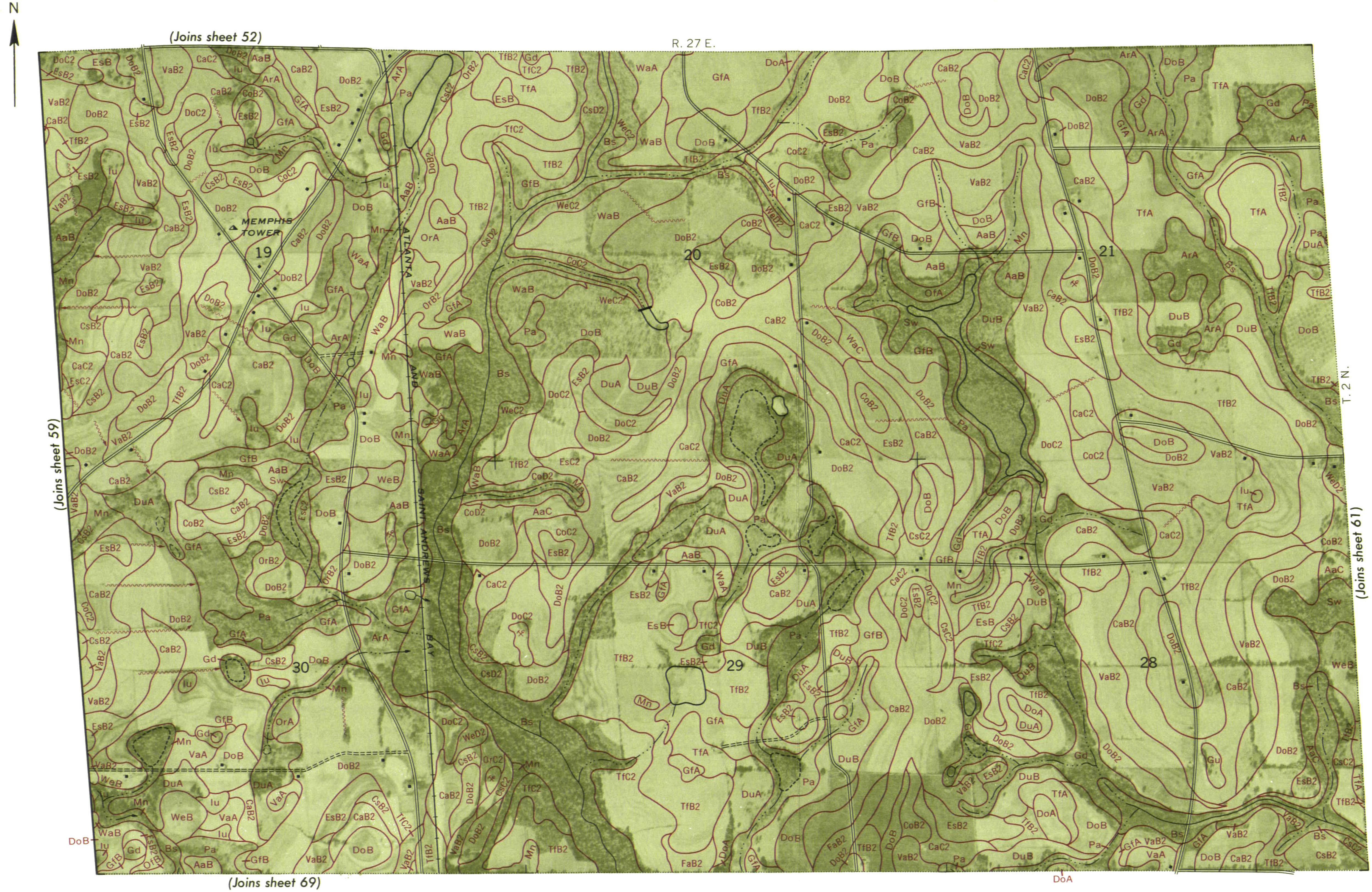


Scale 1:15840

0 ½ Mile

0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 60



0 ½ Mile Scale 1:15840 0 3000 Feet

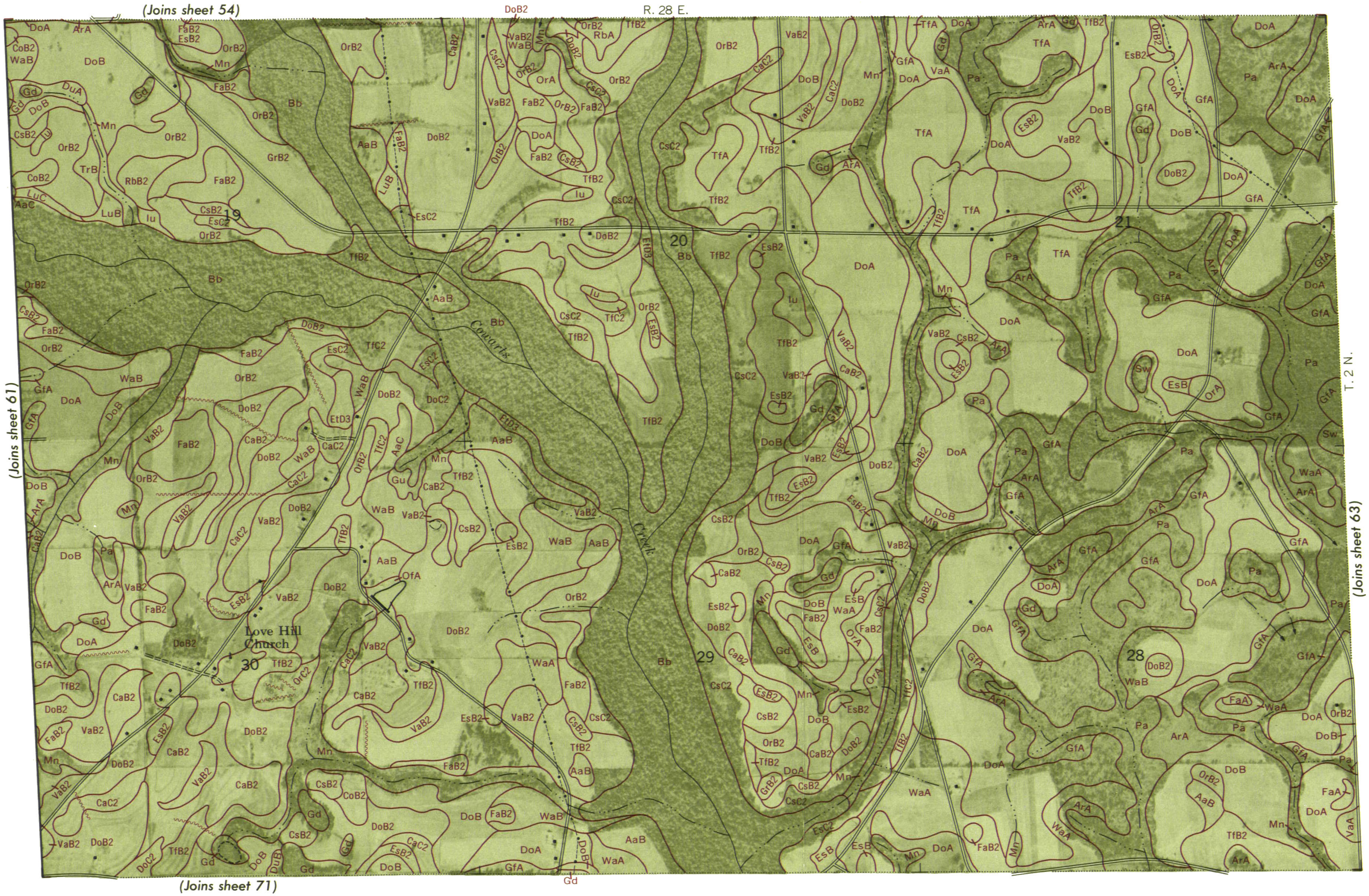
N

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N



0 ½ Mile Scale 1:15840 0 3000 Feet

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Range, township, and section corners shown on this map are indefinite.

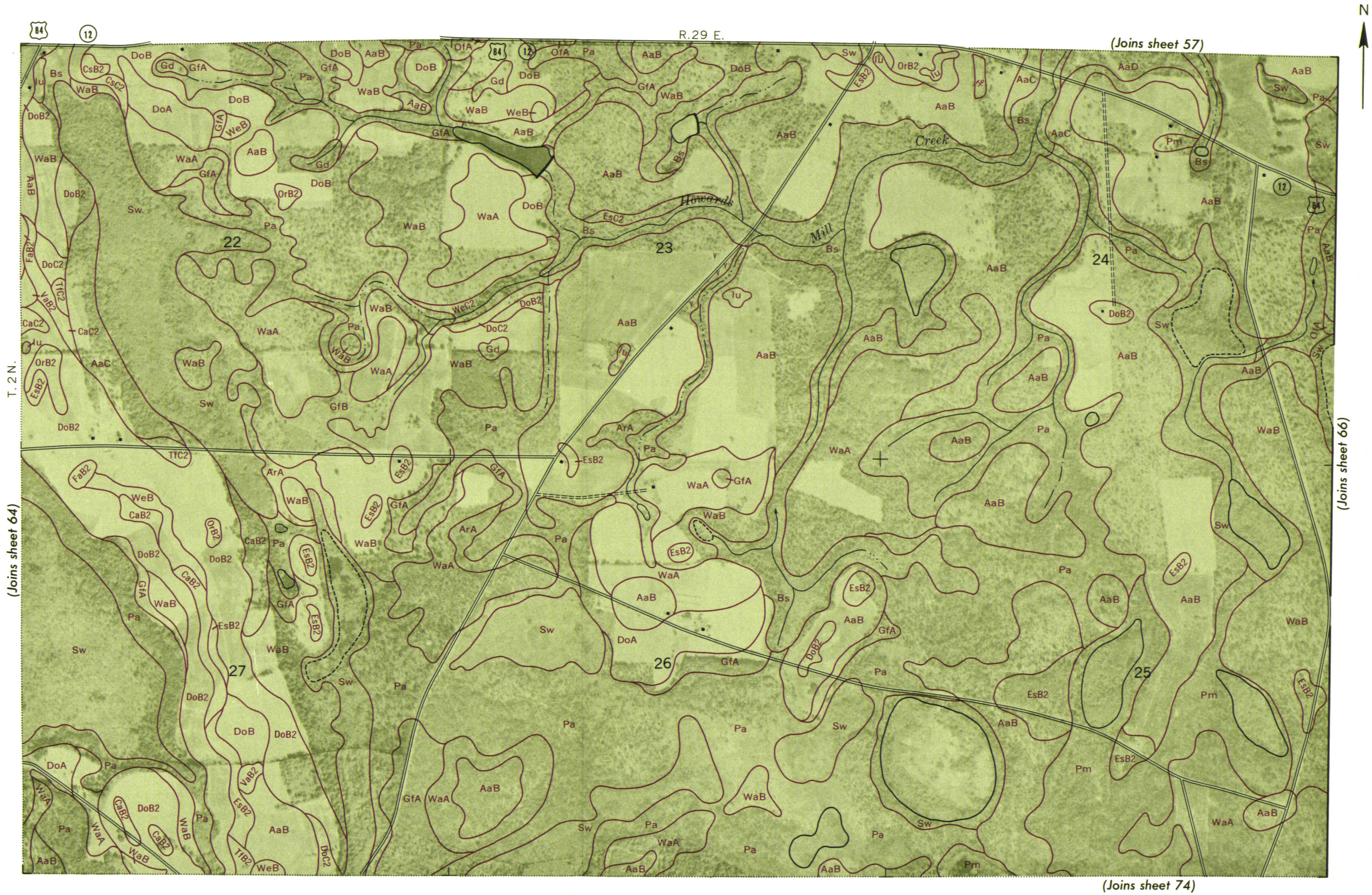
0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 64

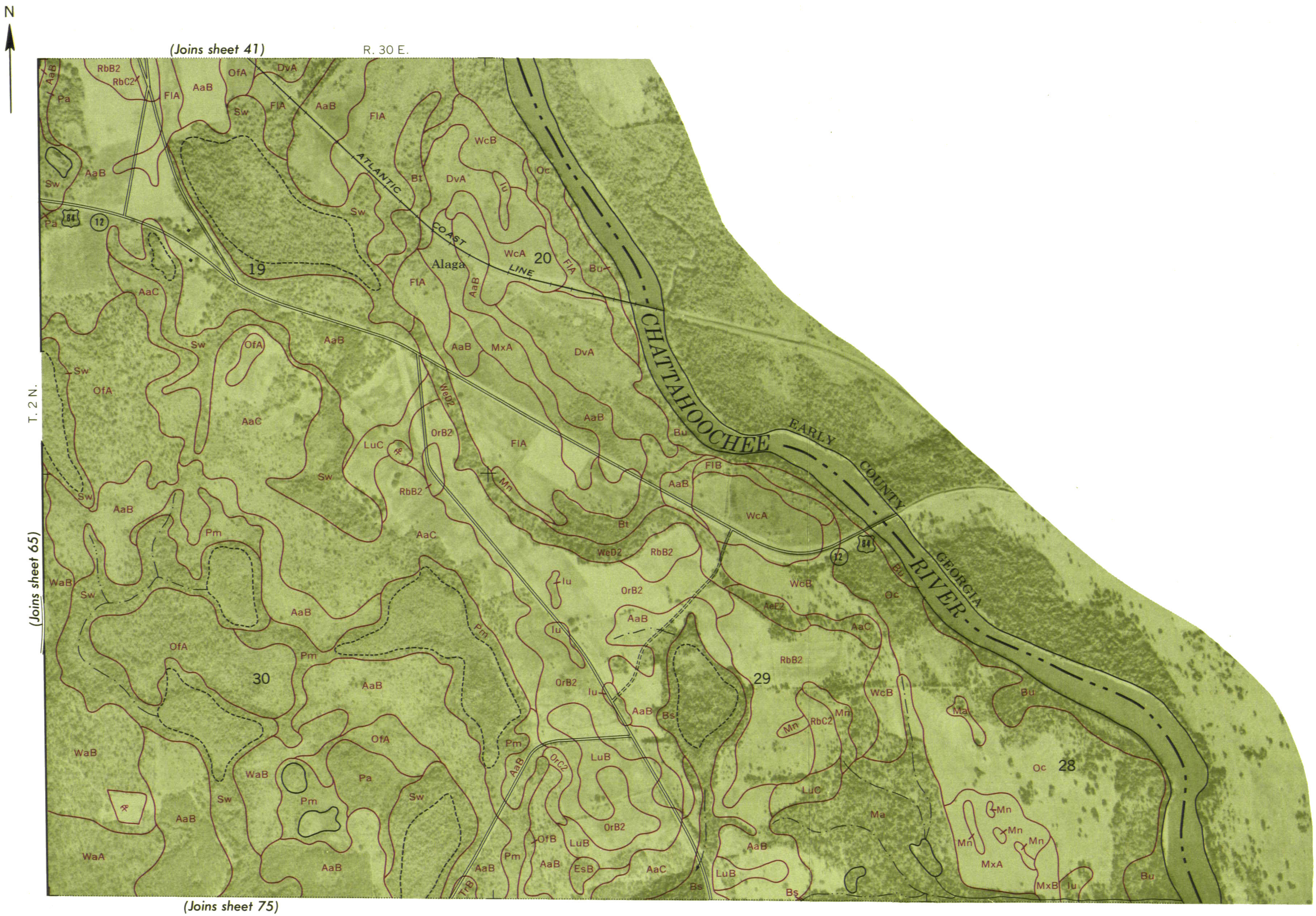
0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

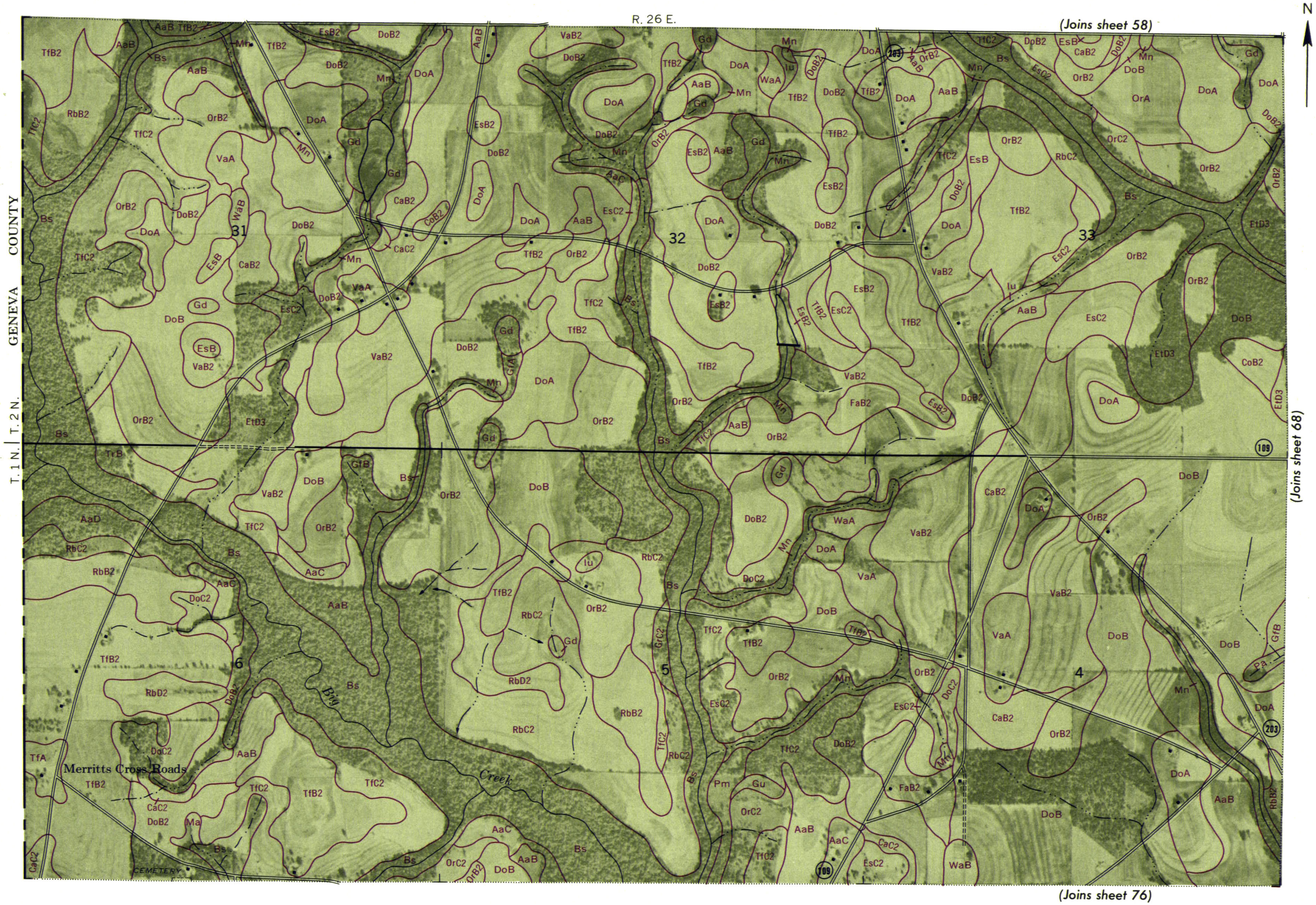
Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet



This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

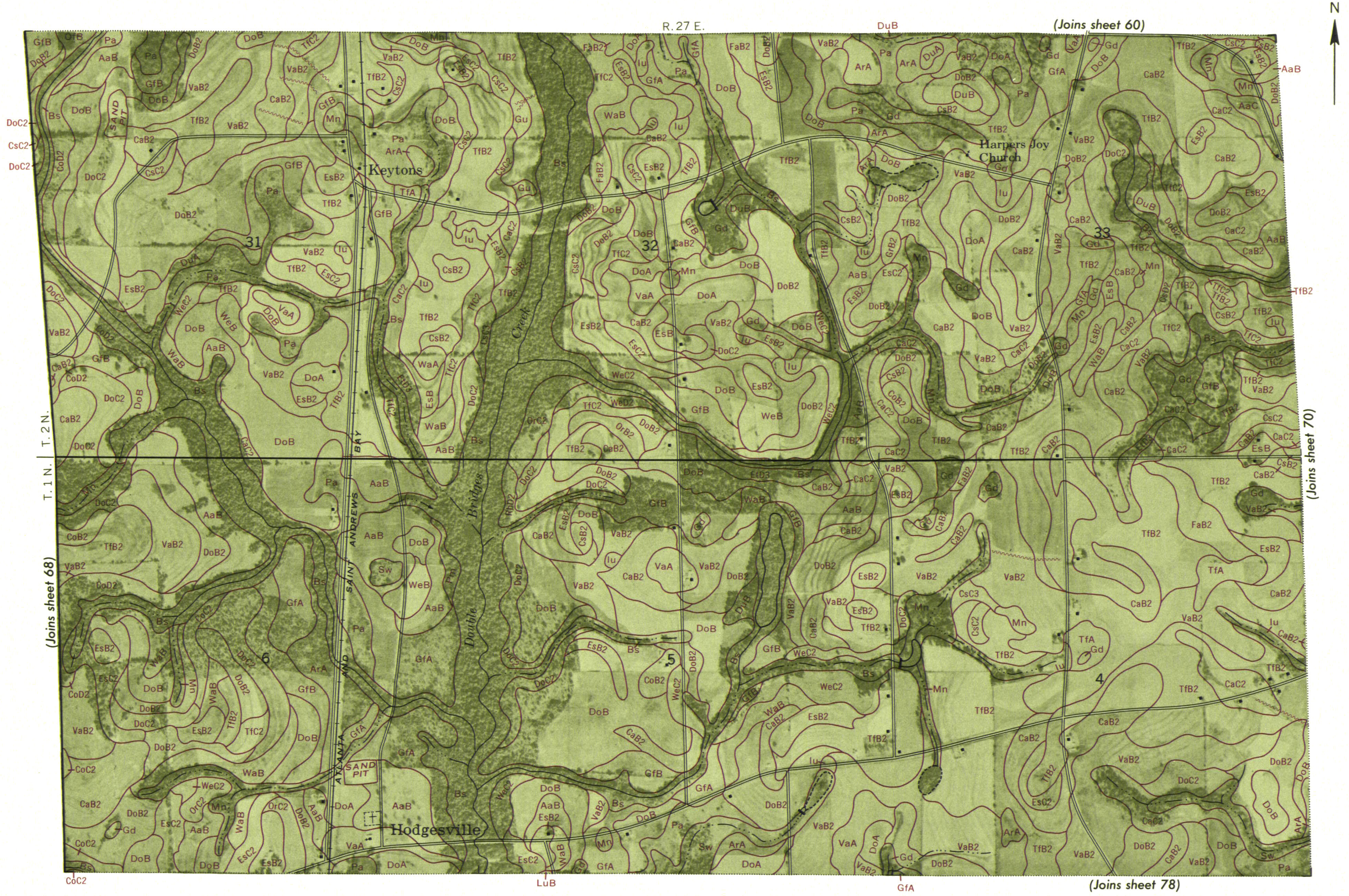
0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 68

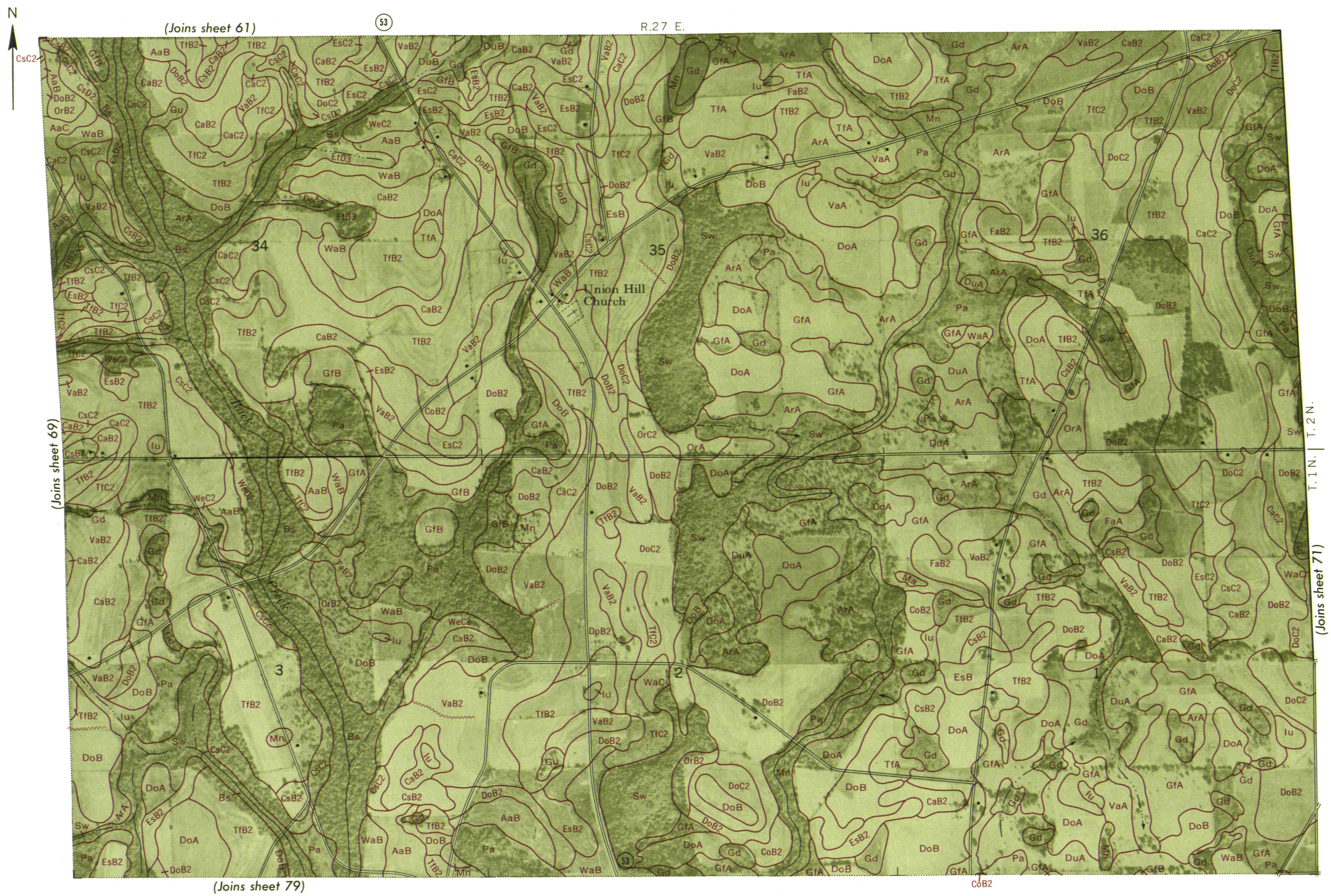
0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



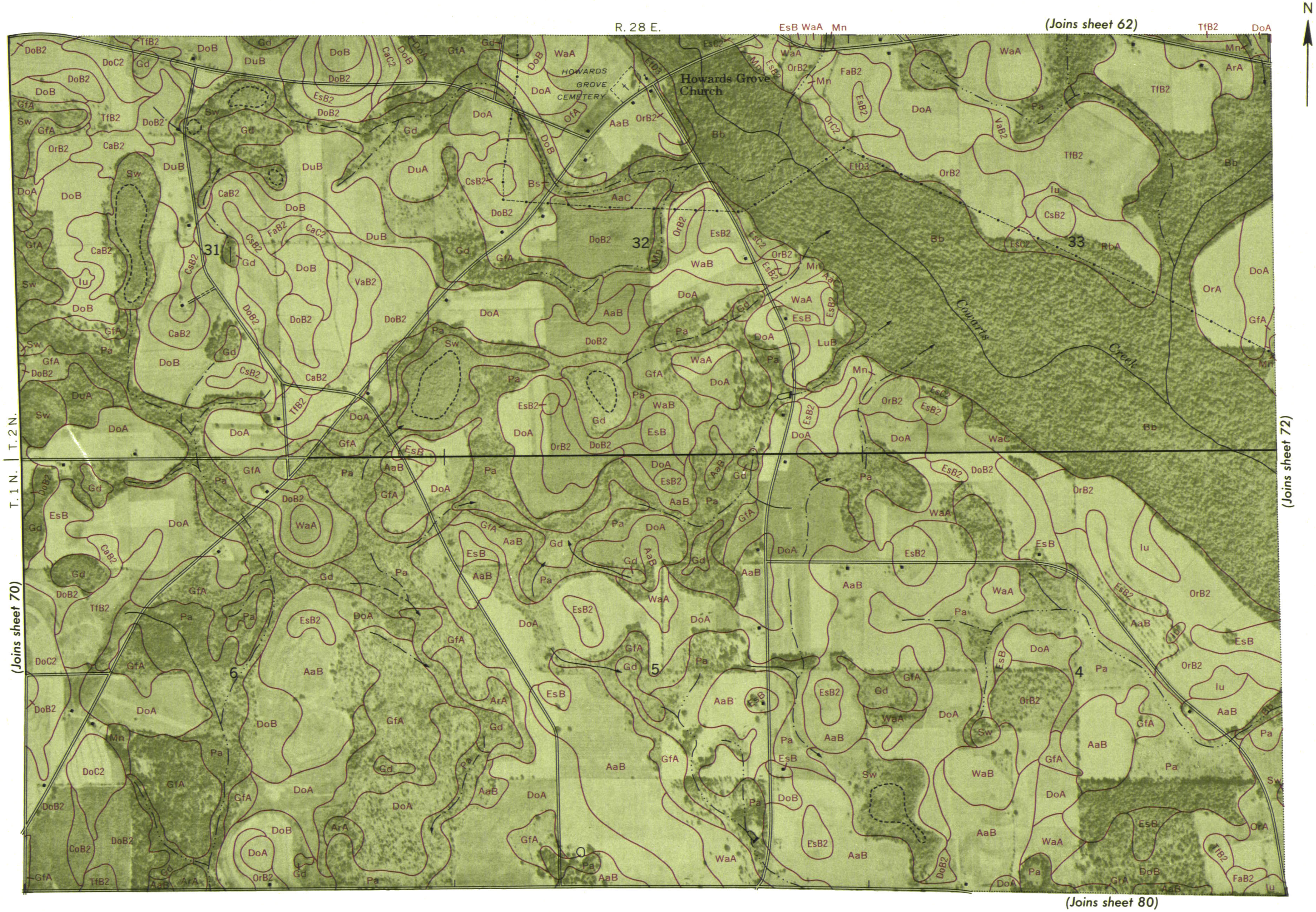
0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

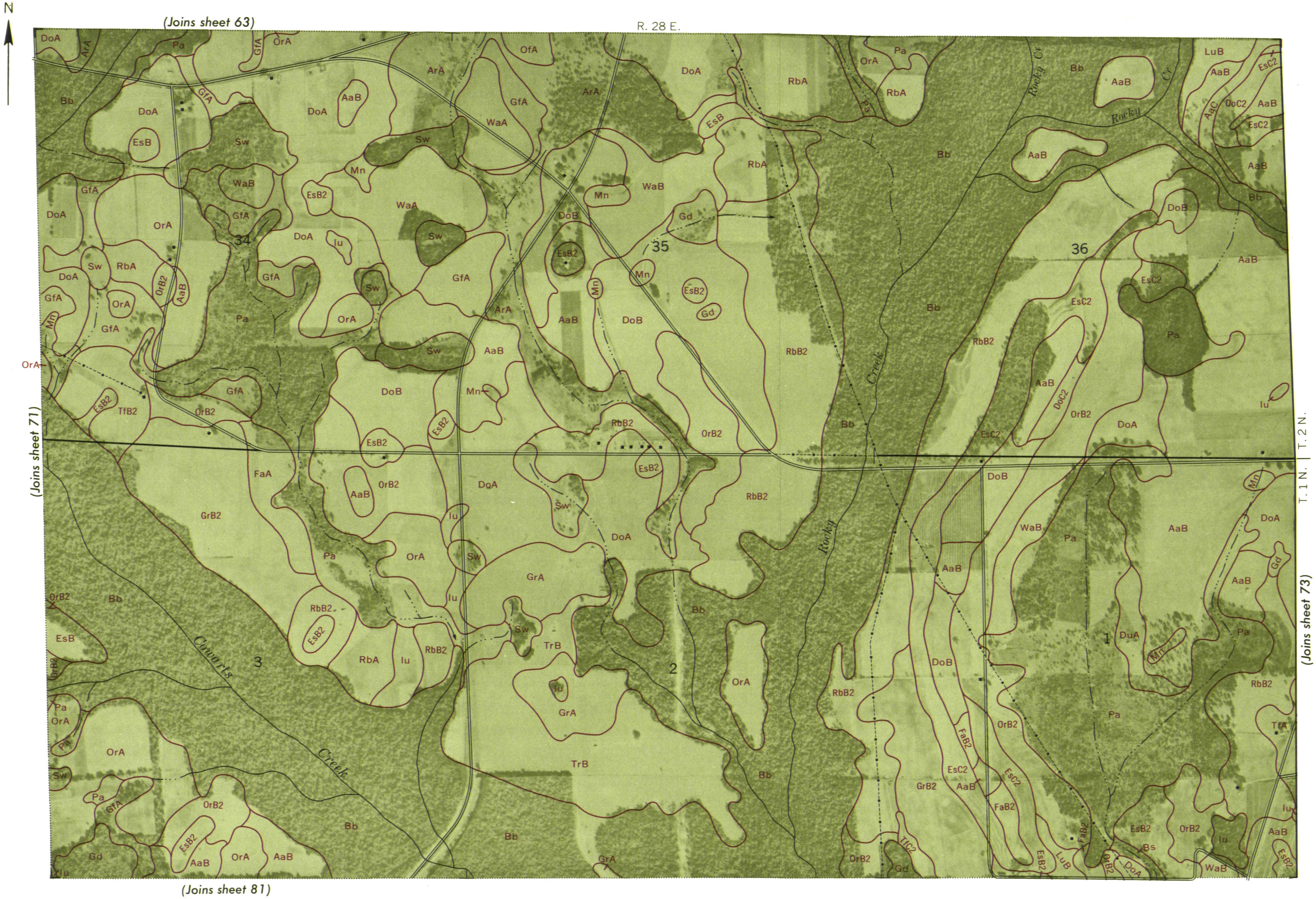
This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 72



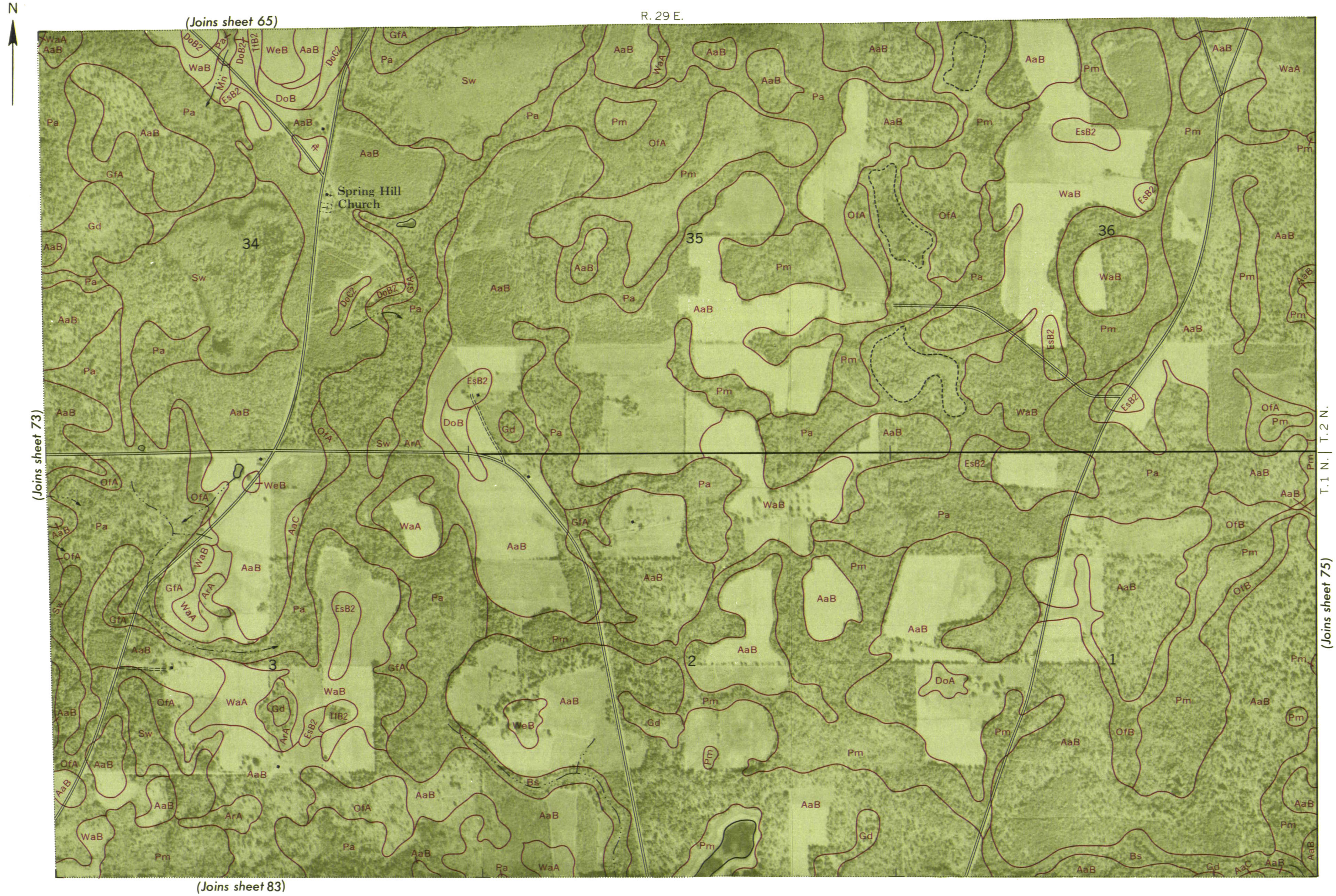
0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N

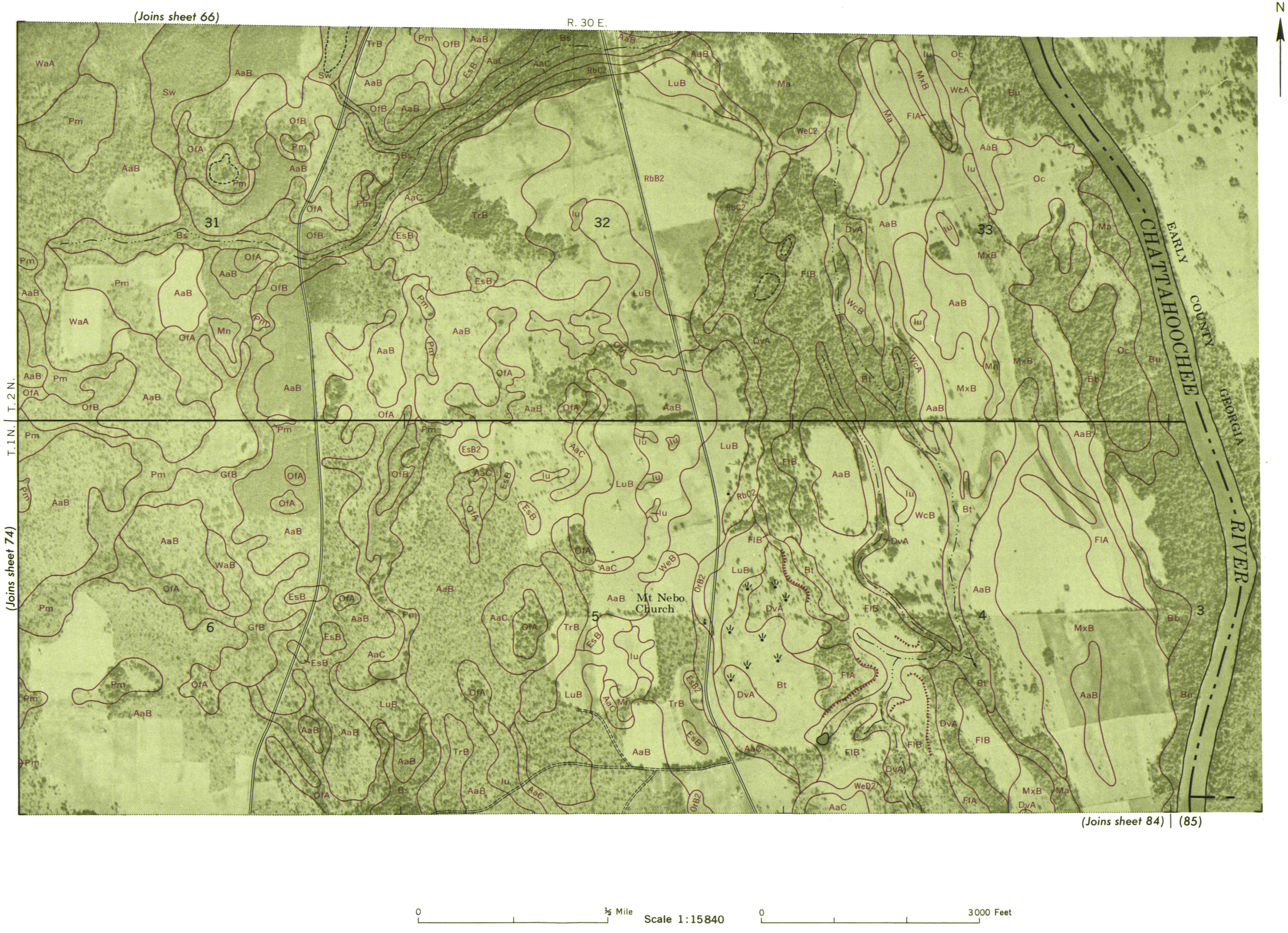
0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.



Scale 1:15840

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 76

N

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 78

0 ½ Mile Scale 1:15840 0 3000 Feet

N

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

0 ½ Mile Scale 1:15840 0 3000 Feet

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Range, township, and section corners shown on this map are indefinite.

N

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 82

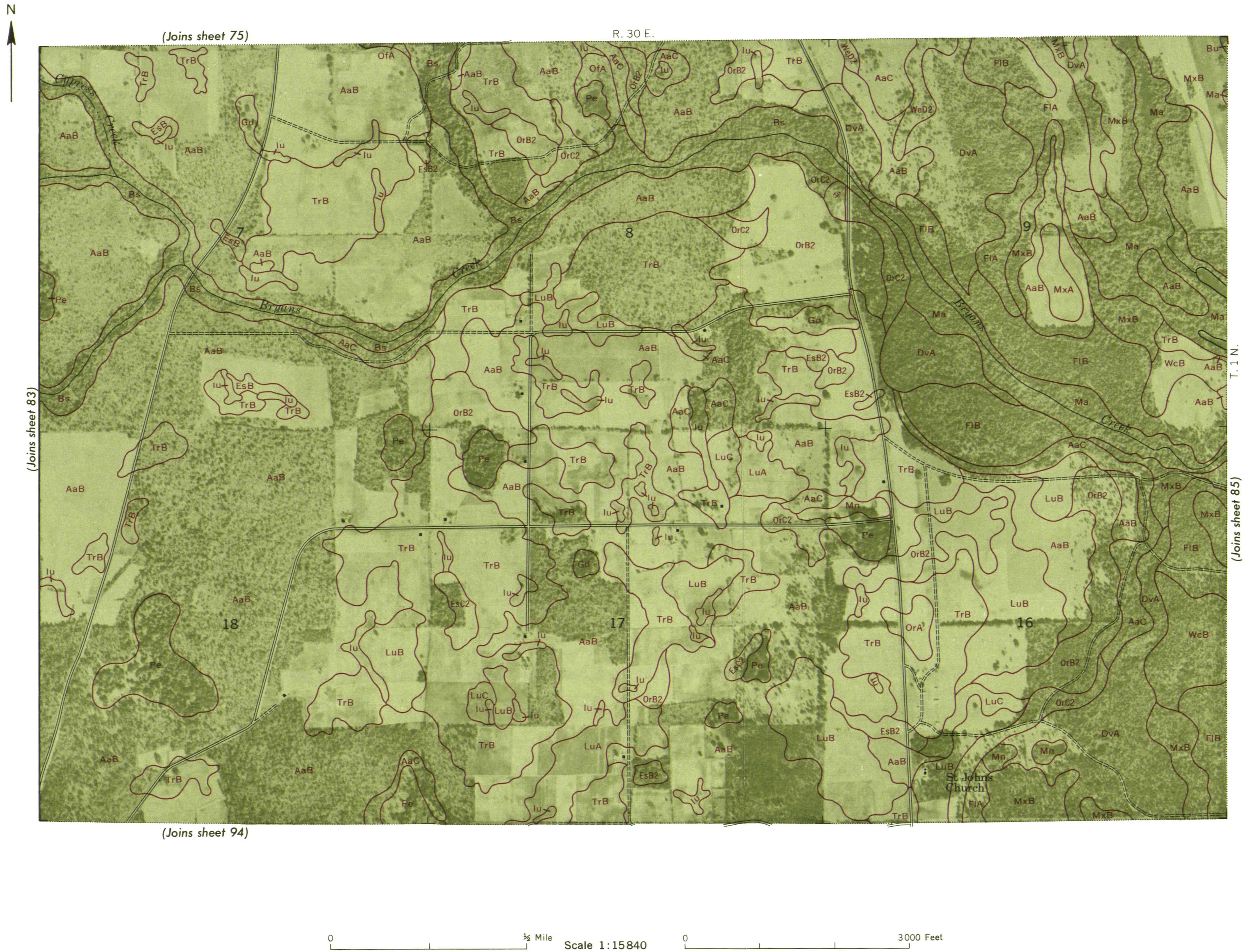
0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 84



This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

N

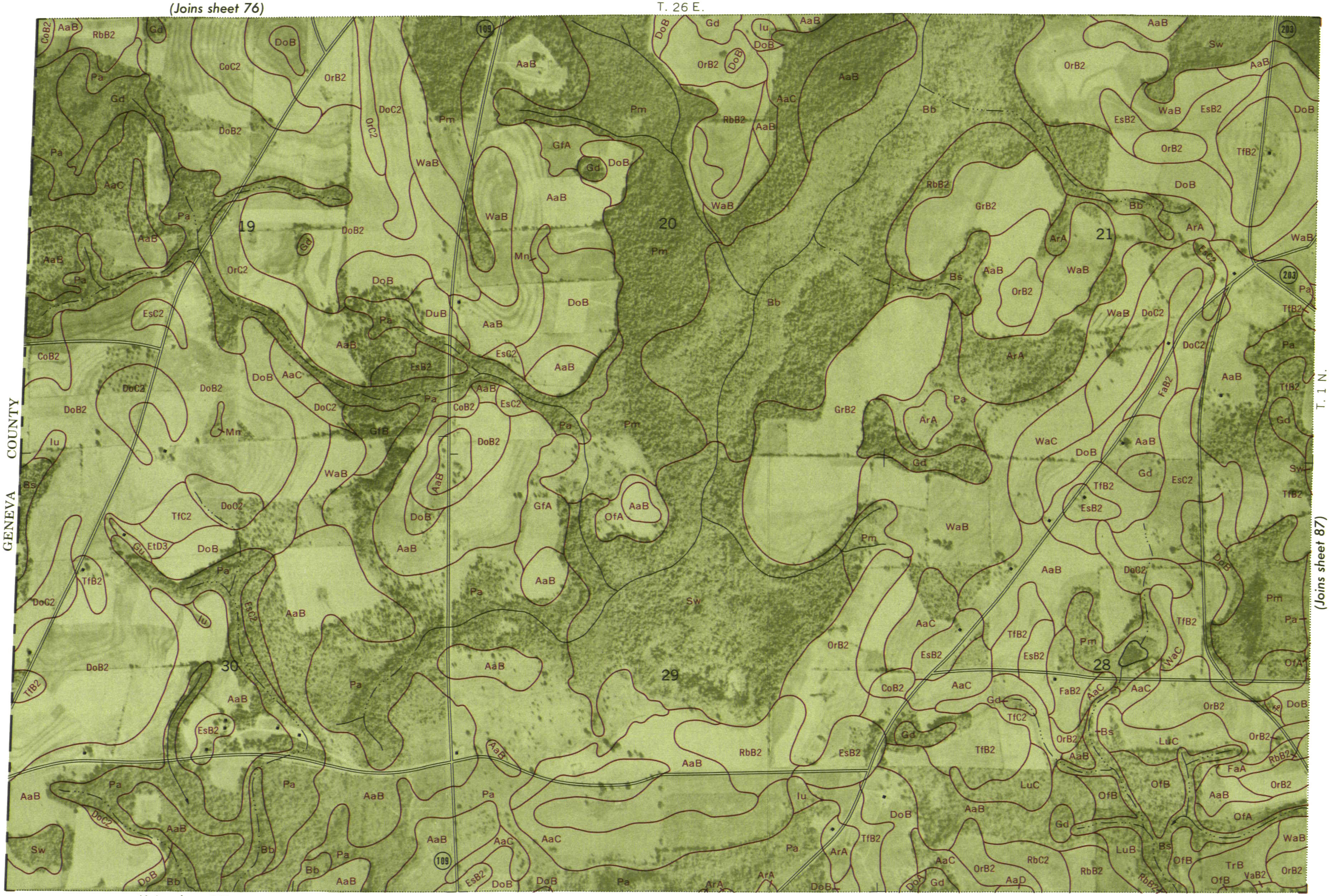
0 ½ Mile Scale 1:15840 0 3000 Feet

86

N

(Joins sheet 76)

T. 26 E.

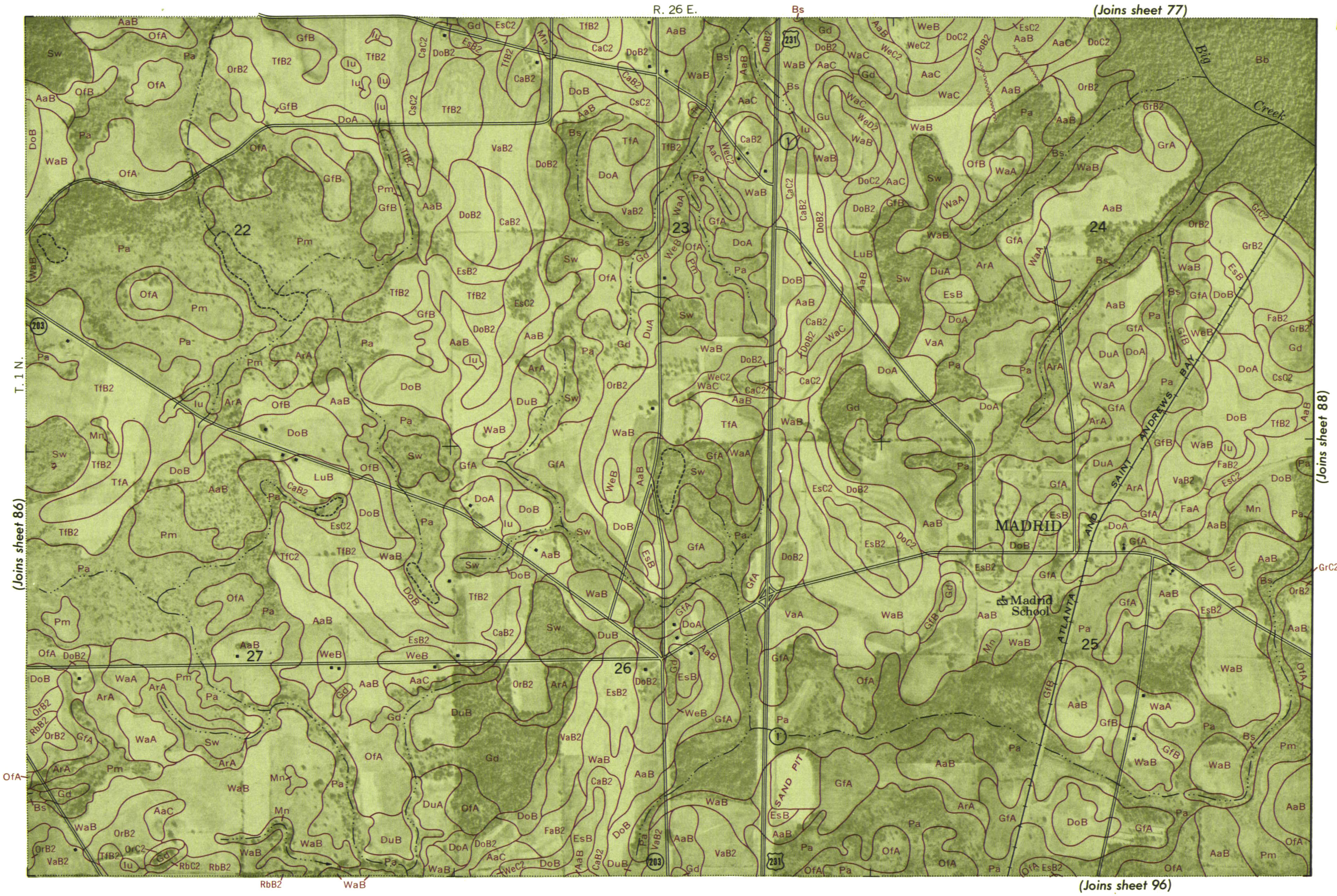


(Joins sheet 95)

Scale 1:15840

0 ½ Mile

0 3000 Feet

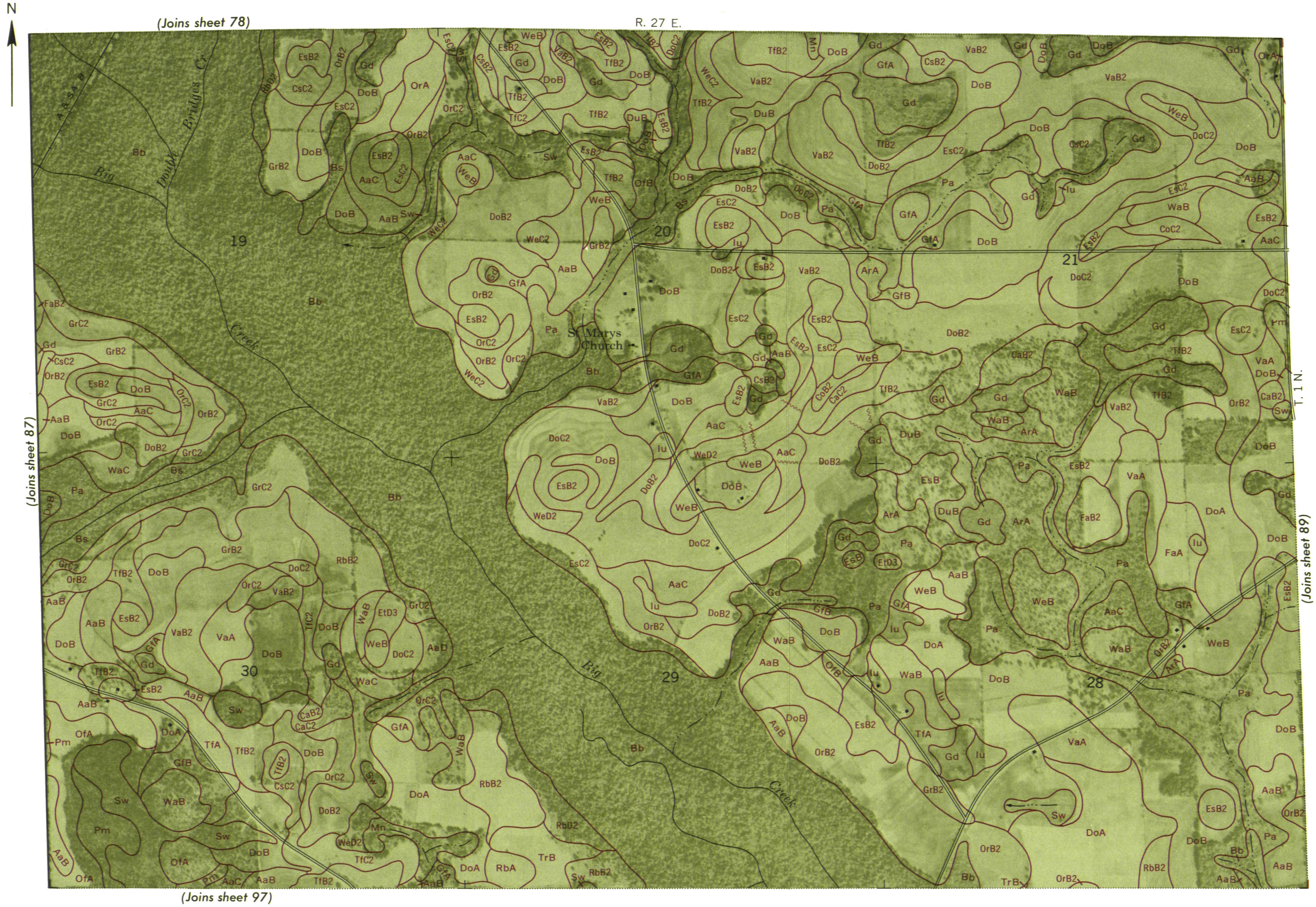


This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 88



0 ½ Mile Scale 1:15840 0 3000 Feet

N

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

N

(Joins sheet 80)

R. 28 E.

(Joins sheet 89)

T. 1 N.

(Joins sheet 91)

(Joins sheet 99)

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 92

N

0 ½ Mile Scale 1:15840 0 3000 Feet

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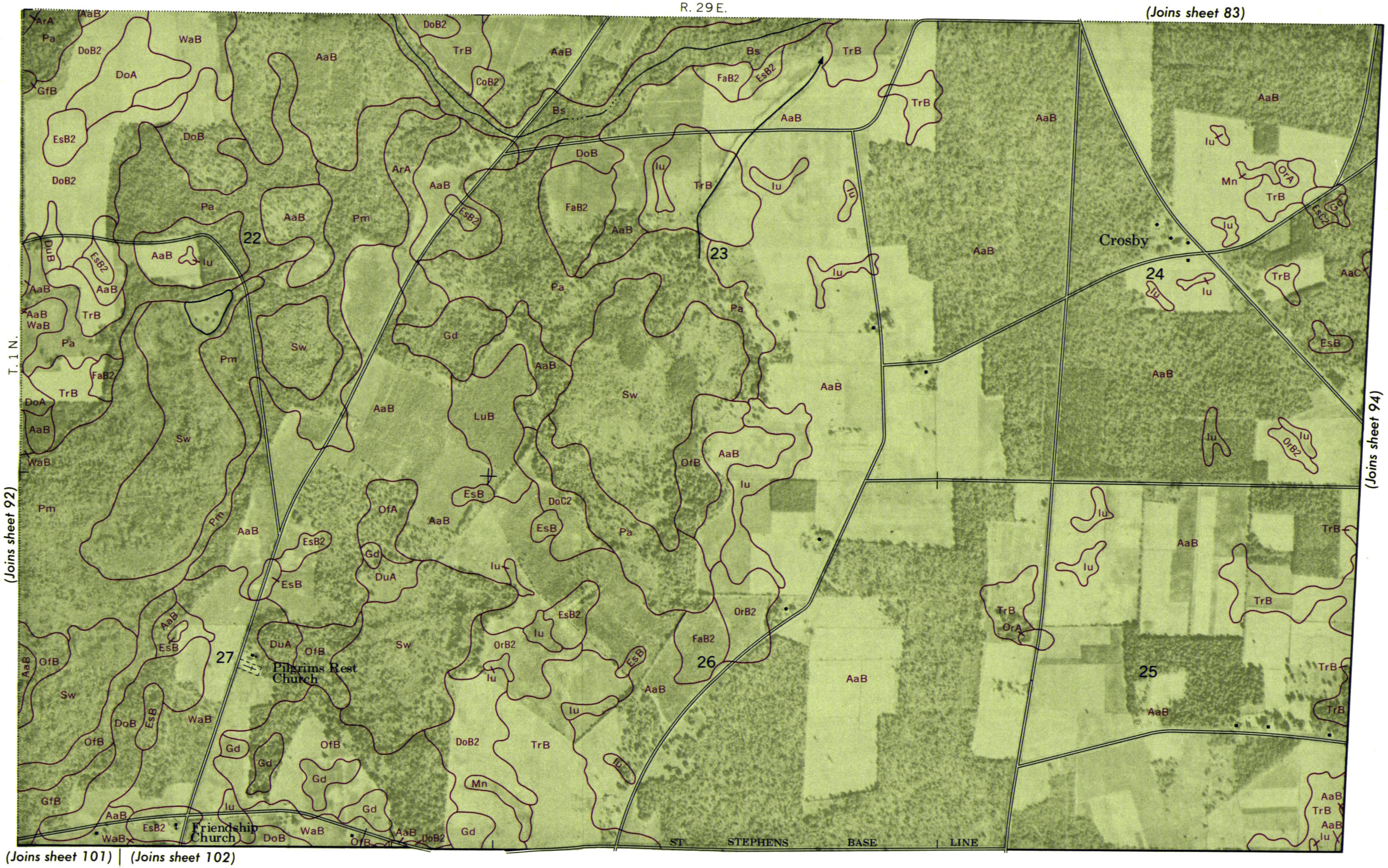
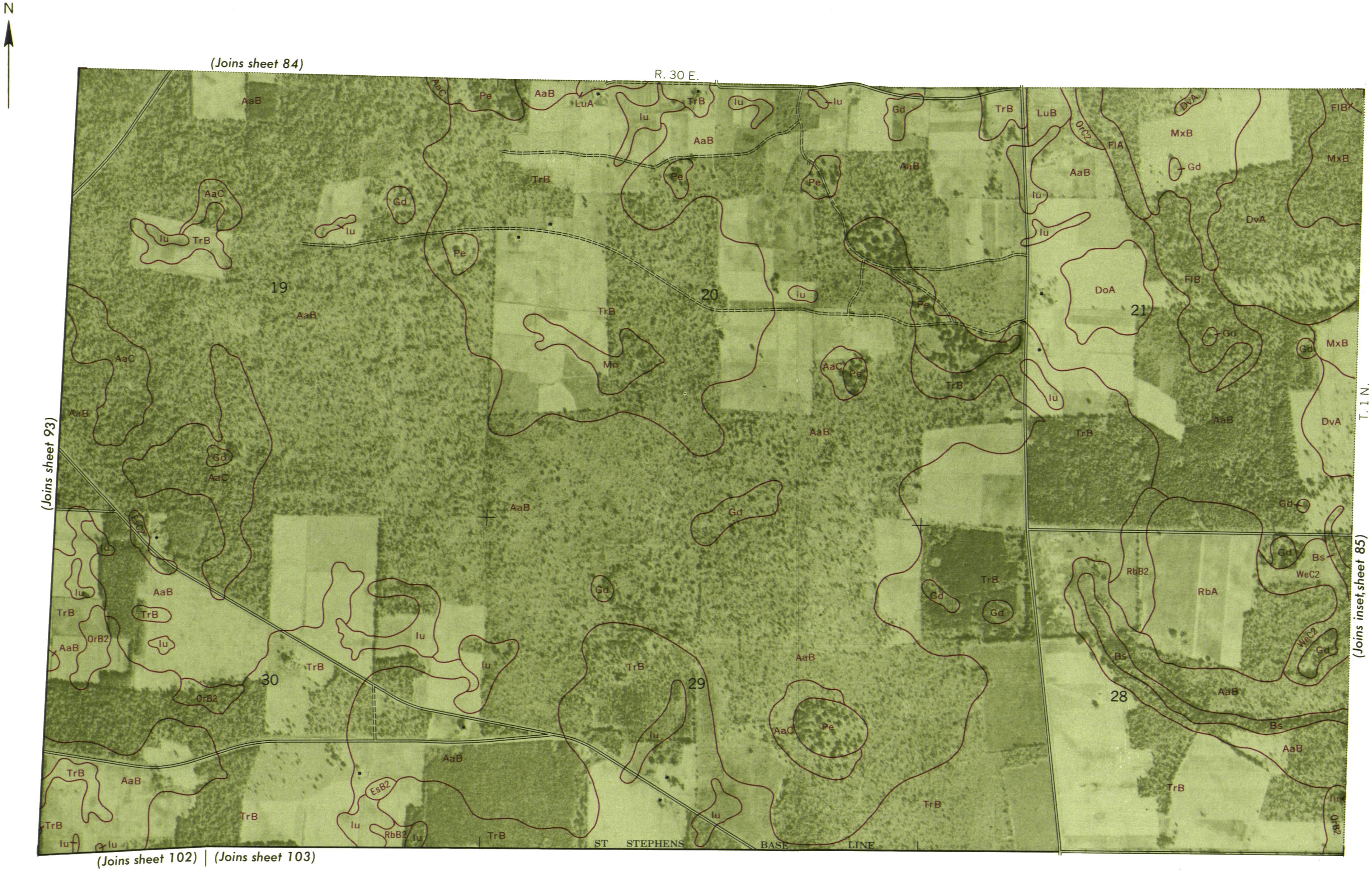
Range, township, and section corners shown on this map are indefinite.



0 ½ Mile Scale 1:15840 0 3000 Feet



0 ½ Mile Scale 1:15840 0 3000 Feet

N

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

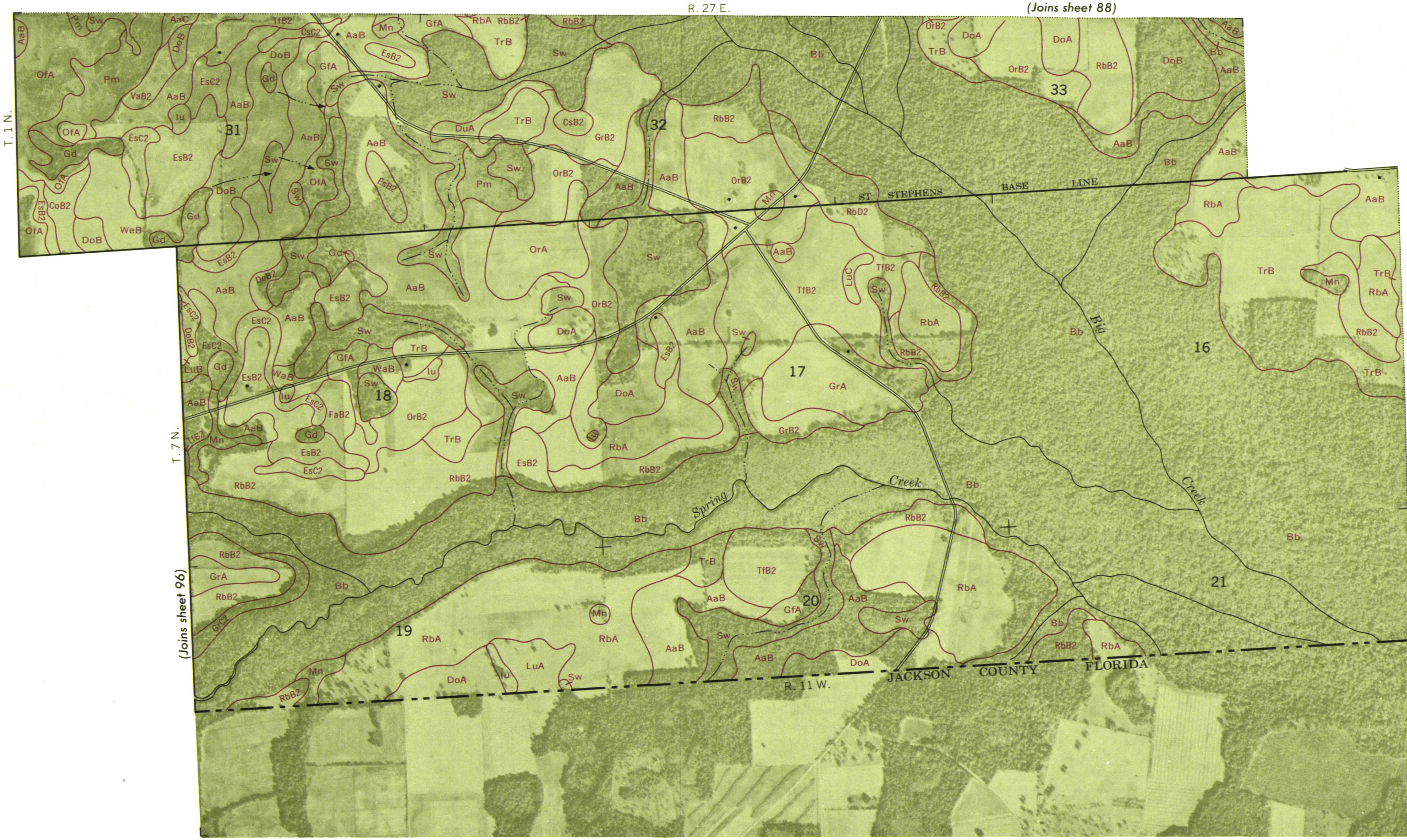
Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 96

0 ½ Mile Scale 1:15840 0 3000 Feet

N



This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet

HOUSTON COUNTY, ALABAMA — SHEET NUMBER 98

0 ½ Mile Scale 1:15840 0 3000 Feet

This map is one of a set compiled in 1966 as part of a soil survey by the Soil Conservation Service, United States Department of Agriculture, and the Alabama Department of Agriculture and Industries, and the Alabama Agricultural Experiment Station.

Range, township, and section corners shown on this map are indefinite.

0 ½ Mile Scale 1:15840 0 3000 Feet